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ORIGINAL ARTICLES.

THE TREATMENT OF CORNEAL ULCERS.

Read before the Milwaukee Medical Society, February 9, 1892.

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One of the most formidable pathological processes of the eye the physician has to deal with is what is known as suppurative keratitis, or ulceration of the cornea. It is safe to state that more eyes are partially or totally destroyed through corneal ulcerations than through any other ocular disease, including injuries and operations.

It is with great anxiety that, when any of the purulent ophthalmies present themselves to the physician for treatment, he carefully opens the eyelids to inspect whether or not the cornea shows any evidence of ulceration. A sense of relief is felt to find the negative true. But not only in the suppurative ophthalmies is this so, ulcerations under many other circumstances may become equally unpleasant and formidable. The many staphylomatous and white eyes, and often no eyes at all, one sees in the various institutions for the blind, as well as on the streets, are a living evidence to this fact. It is not my object to speak of the pathology of ulcerative processes of the cornea, but to form a basis for a successful treatment. I will mention a few facts relative to corneal infection and ulceration.

Ulcerations of the cornea depend, with but few exceptions, for their immediate or remote cause upon some microörganism or ptomaine which, through some avenue or other, gains admission. It is a well-known fact that under apparently unfavorable circumstances the cornea has great power of resistance to infections; but once infected, it often becomes a very difficult matter to eliminate the infection. This depends upon the peculiar structure of the cornea. As you all well know, the cornea is made up of five distinct layers, an outer or epithelial layer being continuous with the conjunctiva; next comes a thin but very dense membrane, known as Bowman's membrane; then comes the corneal tissue proper, which forms about two-thirds the thickness of the cornea; beyond that there is the membrane of Descemet, another very dense and resisting membrane, and next to the aqueous is an endothelial layer. The outer or epithelial layer has but slight resisting power, but it is due to Bowman's membrane that deep infection becomes difficult. Should, however, the infection penetrate beyond Bowman's membrane it is easy to see how the less dense corneal tissue would become quickly infected, and being protected by the overlying dense membrane of Bowman surrounding the source of infection it is equally easy to understand the difficulty encountered in the effective application of remedies.

Although the cornea absorbs liquids with avidity, yet the more powerful antiseptic solutions, such as the sublimate, are not well absorbed, and consequently their value as active and reliable remedies in ulcerations of the cornea has, in many cases, shown itself to be insufficient. Within recent time the analine dyes, being readily absorbed, have been advocated as of great utility, and in the hands of those that have used them have given good results. There is the one great objection to their use, of leaving opacities. A most rational means of cure, but one which is being much neglected, to the great detriment of many eyes, is the use of the galvano-cautery. As a preliminary step of all the severer and deeper ulcerations of the cornea, nothing can commend itself as the red-hot point. From a surgical standpoint, this is the only rational means to favor a quick and safe conclusion of the disease process. With it we are enabled to, without the least danger, lay open our field of infection, remove the over-lying obstructions, and give free access to our remedies to act, and thus insure a speedy termination of the ulceration. In conjunction with the above it is important to stimulate local nutrition and tissue change, which is best done by means of hot fomentations. The instillation of an atropine solution is also much to be desired, as it relieves the irritation of the ciliary nerves and spasm of the iris. The antiseptic and local stimulant of nutrition I have found to give the greatest satisfaction is a 10 per cent. aristol solution in sweet oil. This seems to be readily absorbed, is a comfort to the patient, and in my experience with it I have never found it to fail in doing good. In the lighter and more superficial ulcerations I have often depended upon it, instilling the same into the eye twice or thrice daily, after atropinization and drying of the eye. I have also found it to have a most happy effect upon the purulent process in cases of ophthalmia neonatorum, generally using it immediately after the local application of a 2 per cent. nitrate of silver solution.

Before reporting a few select cases I wish to recapitulate a mode of treatment which may be of value to you. Careful cleanliness in all cases is prerequisite. The use of any mild antiseptic solution such as boracic acid sol. or peroxide of hydrogen will answer the purpose. Atropine is used in nearly all cases, not so much for its curative effect as for the fact that it relieves spasm of the iris and ciliary irritation. It also assists in avoiding a possible prolapse of the iris in cases of perforating ulcer.

In peripheral perforations eserine is safer, though attended with pain at times.

In a case of simple ulceration of the cornea, the use of a 1 per cent. atropine solution combined with the instillation of a 10 per cent. solution of aristol in sweet oil, hot fomentations and bandage, gives, generally speaking, without any further means being

used, a speedy and satisfactory cure. Should the ulceration persist and spread in depth and width, be painful even after the above, it becomes advisable to resort to the galvano-caustic at once. A great mistake is often made by putting off its use from day to day until the ulceration has become quite extensive, necessitating large cauterizations. If used early and before the ulcer has reached the pupillary field, the cautery puts an effective check to its spread without leaving objectionable scars. If the ulcer is quite deep and a perforation seems to be inevitable, it is best to anticipate such in the performance of a paracentesis. We can thus better avoid a prolapse of the iris into the wound of the perforation. Paracentesis will not be found necessary often where the galvano-caustic has been used thoroughly at the proper time. Although being an operation that is quite innocent if properly done, it may be resorted to with benefit where the ulceration is deep and the pain great. By relieving the internal pressure it favors a speedy healing. After any of the surgical means used in any given case the use of atropine and aristol is to be continued in conjunction with the hot fomentations and rest in bed as the case may require, depending upon its severity.

Case 1.—Mr. Christian Differt came to consult me about a large ulcus serpigenosus covering nearly one-third of the cornea. Mr. Differt had been under treatment for over two weeks, but in spite of all treatment the ulcus grew larger and the pain became more unbearable. The history of the ulcer was that it started as a small marginal infection, which by degrees crept back and forth over the cornea until it had gradually infected a larger part of the cornea, and the remedies that were applied seemed to have had no effect whatsoever.

This is one of the most severe and persisting forms of ulceration and demanded a very decided interference. The thorough application of the galvano-caustic with the use of the other means mentioned put an immediate check not only to the further extension of the ulcer but to all pain and discomfort, and the patient could be discharged cured in a very short time.

Case 2.—Mrs. Martha Guember, after having been treated for upwards of three weeks for a deep annular ulcer of the left eye, covering a large portion of the cornea, presented herself for treatment at my office, and after a single application of the galvano-caustic with 10 per cent. aristol and atropine made a speedy and safe recovery without the least extension of the ulcer.

Case 3.—Mr. Coon came to me with a history of gonorrhœal ophthalmia with ulceration of the cornea. It was a very severe and almost hopeless case, yet by careful treatment as above outlined made a quick and very satisfactory recovery.

I do not wish to take up your time any further in reporting these separate cases but would state that in at least twenty cases during last year I pursued this treatment with such uniform satisfaction in even the most severe and hopeless cases, that I can highly recommend this course of treatment. The amount of cicatricial tissue produced by the galvano-caustic is not any more than the ulcer itself would leave, and if operated before the pupillary field is reached no harm can result from it.

DISCUSSION.

Dr. Hayes: Would you apply the cautery where the pupillary field of the cornea is affected?

Dr. Farnham: With reference to the peroxide of hydrogen treatment, can that be pressed and followed by the aristol, so that a large per cent. of cases are cured with it? Cannot you get the peroxide to penetrate and thus cure the corneal ulcer? I refer, of course, to the persistent use of the remedy. And cannot the wound be cleansed with it?

Dr. Würdemann: This subject is one on which we are all apt to temporize. I have seen ulcerations going weeks and weeks, and finally having to come to the galvano-cautery. In most all cases one application will heal a severe ulcer such as comes after gonorrhœal ophthalmia. The use of atropine in corneal ulcerations gives relief to pain, but probably has no effect on iris prolapse, because if the anterior chamber is cut open, or if there is a leaking of the aqueous humor, the atropine will have no effect upon the iris; but the pupil will remain contracted or in a state of partial contraction. Some place much reliance upon the use of eserine; it is claimed that it has a specific action in the healing of the cornea; I have been in the habit of using it sometimes in connection with atropine, using the latter purely on account of its analgesic effect.

Dr. Frank: Has not resorcin been used in similar ulcerations of the cornea?

Dr. Farnham: In the application of the cautery, do you cover the whole surface of the ulcer?

Dr. Würdemann: There are no bad results in the use of the peroxide of hydrogen with small corneal ulcerations; I have used it in one case where it raised the whole epithelial tissue, but the next day I found that no harm had been done; the gas had been absorbed and the tissue had gone back to place.

Dr. Bach: In reply to Dr. Hayes' question I would state that in case of the involution of the pupillary field and when the ulcer has perforated Bowman's membrane and entered the tissue, it is best to apply the cautery there, and check the spread of the disease and allow opportunity for iridectomy later on; in that way we may gain a very good vision, but otherwise we may destroy the field for iridectomy. The method is being used more and more with continued and increasing satisfaction.

With regard to Dr. Farnham's remarks about the peroxide of hydrogen treatment, I would say that while peroxide of hydrogen acts very nicely in some cases, nevertheless the activity is not great enough to destroy some of the severer forms of ulceration, and the spreading of the disease is a great source of danger; you can use the peroxide for cleansing the wound, but you cannot destroy the germ in the severer forms of the disease by the employment of it.

With regard to the employment of resorcin, the latest reports have not been as favorable as others; resorcin is not perfectly satisfactory in these diseases.

This is an ulceration which goes on under a dense, well protected membrane. The ulceration does not progress, as such, in the epithelial layer at all; the ulceration creeps under Bowman's membrane and the epithelial tissue proper, and the latter, of course, becomes destroyed.

The galvano-cautery should be applied only to the borders of the ulcer.

In reference to Dr. Würdemann's remarks, I should say that eserine seems to exercise a very favorable effect in some cases, but it is sometimes attended with considerable pain on account of the spasm it produces to the membrane.

With regard to raising the epithelial tissue by the use of peroxide of hydrogen, I would say that that happens quite generally. When the peroxide is used, it enters quite a distance under the epithelial layer; but it will disappear in a few hours.

Concerning drugs generally I would say that they are hardly sufficient and that the only rational means are surgical. For that reason I have dwelt considerably on the subject of the cautery, and since there is no objection to its use, I do not see why we should depend upon various drugs except for the purpose of cleanliness. The cautery is a simple, quick and effective means and saves a great deal of time and pain; it does not produce inflammation, and is applied painlessly by the use of cocaine, and in every possible way it is an advantage, and really it is the only rational method; which is not the case with any drug. They can only be auxiliary to the operation.

IMMIGRATION AND TYPHUS.—A resolution has been introduced in the national House of Representatives in concurrence with the Senate providing for an investigation by the Senate and House Committees on Immigration, of the law relative to immigration, and the facts attending the condition of the typhus-stricken Russians at New York.

SOME EXCEPTIONS TO "THE GOLDEN RULES" OF OBSTETRICS.

BY T. RIDGWAY BARKER, M.D.,

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In presenting this paper it is not the intention of the author to attempt to undermine the "golden rules" of the obstetric art, but rather to call attention to the exceptions and limitations which hedge them in and which, unless borne in mind, are certain to result disastrously to both patient and physician. Theory, 'tis well said, may be likened to the chaff which is blown hither and thither by every passing breeze, while practice is the golden grain that springs into life wherever it falls. Yet, let us not discard as worthless these husks, for they serve a good purpose in protecting the unripe fruit stored up within them, and besides are useful in feeding the flame of scientific research. The one rule upon which, perhaps, more stress has been laid in the department of obstetrics than any other is: "In cases of labor attended with severe hæmorrhage during the latter part of the second and the whole of the third stage, promptly empty the uterus, and at the same time stimulate uterine contractions." Few there are, perhaps, who cannot recall the force and earnestness with which such a practice was advocated. "Turn out the infernal clots," still rings in many old student's ears, though the author of them has long since passed away. But is this rule, though a good one, to be rigidly carried out under all circumstances? Theory boldly makes answer, without hesitation, "Yes!" while Practice, on the other hand, says, "No!" Hence, we must turn to Experience as being a higher court, and submit the whole matter to her for a final decision.

Before, however, asking for an opinion, I would offer in evidence the history of the following case, which has, I think, a direct bearing upon the subject: Mrs. F., aged 30 years, white; American; mother of two children, both now deceased, I was called upon to attend in 1889. There was no history of miscarriages, nor tendency to hæmorrhage in previous confinements. She last menstruated on September 16; duration, five days; in every respect normal. Some weeks after its disappearance there occurred slight morning sickness, but at no time did it seem likely to undermine the patient's health. The usual bladder and respiratory disturbances were present; likewise, anæmia, which tended to become aggravated as gestation advanced toward completion. Calculating by the Duncan method, her confinement might be expected about the last week in June or the first in July.

On the 28th day of May, however, I was called to attend Mrs. F. She had been, I was informed, in labor all night. Deeming a digital vaginal examination necessary, I proceeded at once to place my patient in proper position. On exploration of the utero-vaginal canal, I found the uterus settled low down in the pelvis, with the cephalic end of the fœtus presenting. The os was already somewhat dilated, and each pain caused its further increase and bulging of the membranes, indicating, beyond contradiction, that whatever had been the duration of the period of gestation the woman was in the first stage of labor. The fetal heart-sounds were audible, and the uterine contractions, though not very strong, were of ordinary length and frequency. The abdomen was not unduly distended, and there seemed no cause for anxiety as to the ultimate result. Leaving my patient to the care of a neighbor, who was to act as nurse, I did not see her again for some hours. On my return I found, on inquiry, that the pains were rather weak, and that, though the os was sufficiently dilated, the head had not engaged satisfactorily.

My patient was much exhausted, and gave evidence of a lack of nervous tone, which warned me that to delay longer the delivery of the fœtus would endanger its life as well as that of the mother. Why the prostration should have been so rapid and extreme, since it developed in a few hours, I was at a loss to understand, until subsequent investigation acquainted me with the fact that my patient had taken large and frequent draughts of whisky in my absence, in direct violation of instructions.

Deeming the case to be one suited to the immediate application of the forceps, I applied them to the sides of the fœtal head and delivered, without undue haste or difficulty, under chloroform. No laceration of cervix or vagina was discoverable, though hæmorrhage quickly followed extraction, and was of an acute character, which had its origin in the uterine cavity.

Hastily grasping the fundus of the uterus, I found the organ was not contracting properly, and that I had to treat a grave case of post-partum hæmorrhage without adequate assistance. By external manipulation over the abdomen I endeavored to secure firm uterine contractions, but though the muscular fibers responded slightly to strong irritation, yet in a few seconds relaxation followed, and the blood poured forth in a stream from the vulva.

Like a flash of lightning the golden rule—"turn out the clots, separate and remove the retained placenta"—came into my mind, and I proceeded to do so. Introducing one hand into the vagina and carrying it up into the uterine cavity, while the other grasped the body of the organ through the abdominal wall, I strove to detach the placenta which I found adherent to the internal coat. The difficulty attending separation was due to a failure of the chononic villi to undergo atrophic changes as the gestation approached full term. At last the villus attachments were broken up and the placenta withdrawn by the examining hand. During the time expended in attempting to remove the afterbirth my patient was given one drachm doses of the fluid extract of ergot every fifteen minutes, part of which was, however, vomited. No sooner had I emptied the uterus than the flow of blood, instead of lessening, greatly increased, until it fairly welled out of the birth canal, and running through the mattress formed a pool on the floor.

Vaginal injections of hot water proved ineffectual, seeming rather to increase than to control the hæmorrhage. To keep the uterine cavity free from accumulated blood and secure contractions was impossible. The blood had lost the power to coagulate, and could not respond to the means employed to bring about such a desired condition. It remained, even on the floor, in a perfectly fluid state, though exposed to atmospheric influences. A strong solution of the subsulphate of iron in hot water was thrown by a Davidson syringe into the uterine cavity, but failed to reach the bleeding point owing to the amount of blood already in the organ. The uterine

walls were as limp as a wet piece of tissue paper, perfectly devoid of their normal tonicity. Ergot had not the slightest effect; in fact, it was doubtful if it was even absorbed.

Stimulants, whether introduced by hypodermic or stomachic methods, were unavailing. What was to be done? By this time my patient was almost exsanguin and in a state verging on collapse. Consciousness was lost, though her head had been lowered and her feet elevated at the very first sign of dangerous hæmorrhage. Intense thirst was present, and it was evident unless the bleeding was speedily controlled death would inevitably result.

A binder was now drawn tightly about the abdomen with the hope of preventing further relaxation of the organ, but it, like the other means, failed.

Still the flow continued in spite of drugs, external and internal manipulations, and efforts directed to compress the abdominal aorta. To stop the hæmorrhage seemed beyond the powers of science. In about fifteen minutes after the completion of the third stage of labor life was extinct. Not less than two quarts of blood had been lost; besides, the cavity of the uterus was distended with, perhaps, half as much more. Thus terminated fatally one of the saddest and most trying cases of post-partum hæmorrhage I have been called upon to treat.

In meditating upon the management of this case, I now see, which experience, not a blind adherence to theory, has demonstrated, that the result was due indirectly, if not directly, to three causes: First, excessive imbibation of whisky, taken by the patient contrary to orders, which tended still further to depress the already anæmic nerve centers at a time when life depended upon their activity; second, persistent efforts to separate an adherent placenta in a case complicated by threatened uterine inertia with the idea of removing all substances likely to retard or prevent uterine contractions; in other words, following out literally that golden rule—"turn out all clots from the uterus and remove the placenta as early as possible in cases of labor complicated by hæmorrhage"; third, the mistake made in not packing the whole uterine cavity at once with any clean fibrous material at hand, saturated with a powerful styptic, as soon as it was evident the uterus would not, or could not contract. This latter procedure, which at present has so many advocates, and has given such satisfactory results—Dührssen, of Berlin, having treated seventy-nine cases successfully—in addition to the other means employed, would, I firmly believe, have saved my patient. But I hesitated to tamponade the cavity of the organ, fearing subsequent infection, and relied upon other measures, which I pushed to the limit of safety, believing every moment they would excite the uterus to contract and close the open-mouthed uterine sinuses. Having failed, through an error of judgment, to employ the comparatively new method of tamponing the uterine cavity, I feel justified in bringing this subject to the attention of the medical profession, that the exception to this golden rule may be laid down as strongly as the rule itself. The case I have reported only too clearly proves how important is our duty in this respect. Let us take warning, lest we are overanxious to tear off a placenta and clear the uterus of its contents; for if the organ fails to contract, we will only drain off more blood and further jeopardize the life of our patient. That one cannot rely solely upon ergot in such an emergency would appear evident from cases reported by Oui, of Bordeaux, who, in order to save his patients, was obliged to tampon the uterus. Should we be obliged to resort to packing the uterine cavity, let us not delay doing so, lest our patient expire while we stand idly by making up our mind. Direct and equitable pressure, which can thus be brought to bear upon the bleeding points, is the safest and surest method of treating grave cases of post-partum hæmorrhage. That there is an element of danger from subsequent infection, is very true; but what is the risk of septicæmia in competent hands compared to instant death? Under such circumstances the demand is for immediate action, or our patient will be a corpse. In conclusion, then, it would appear that the exceptions to these golden rules are no whit less important than the rules themselves. Practice must govern theory; not theory, practice. Therefore let us express, without fear of contradiction, these exceptions: First, do not tear off an adherent placenta from the uterine wall, in cases of labor complicated by hæmorrhage, unless the uterus gives promise of speedily contracting.

Second, emptying the uterus of fluid blood is useless when coagulation cannot be secured, and when uterine inertia persists.

Third, do not delay packing the whole utero-vaginal canal firmly, in post-partum hæmorrhage, if the organ will not contract and close the uterine sinuses.

A CHILD WITHOUT ARMS OR LEGS. MATERNAL IMPRESSIONS.

BY JACOB SCHNECK, M.D.,
OF MT. CARMEL, ILL.

On September 30, 1885, I attended Mrs. B. in her third accouchement. I found a breech presentation, in the sacro-pubic anterior position. The child was a female, and was born after about four hours' ordinary labor. The cry was feeble at time of birth, and gradually grew weaker until, at the end of fifty minutes, the child died; no special effort was made to assist it to live. It weighed about 7 lbs. The body, so far as external inspection could determine, was in every way normal and well developed. The four extremities were entirely absent. The ends of the clavicle and scapula could be distinctly felt; but there was no sign of a remnant of an arm. The lower extremities were represented, each, by a fleshy teat-like protuberance, about ½ inch long; these did not appear to be attached to the pelvic bones, nor could I find any small nails attached to them.

The umbilical cord was small and about 15 inches long. The membranes were thick and of a dirty yellow color, and contained a small quantity of a thick fluid. Floating in this was about one pint of a thick whitish, soft substance, which had the appearance of macerated and partially dissolved skin. The inner surface of the membranes showed no evidences of former bands or ligatures.

The mother, an American woman of good family, is an uncommonly well developed individual, being a little above the medium height; was then 23 years old; is very fond of the dance and other gay society—had spent many of the evenings during the preceding winter on roller skates. She had menstruated regularly, last, on January 4, 1885, 269 days before her confinement. Was in excellent health until May

30, when she was attacked with inflammatory rheumatism, which, after the first ten days, assumed a chronic form, and was then principally confined to the left knee-joint, which was still stiff and considerably enlarged at date of accouchement. On the evening of March 22, two and one-half months after the last menstruation, she saw the dead, and partially naked, body of a young woman who had been burned so severely that she died in a few hours. The arms and body were the principal parts that were burned, and that were exposed at the time Mrs. B. saw her. She was so horrified at the sight that she did not sleep for over twenty-four hours.

In his excellent article on "Teratology," in the Reference Handbook of the Medical Sciences, Vol. vii, p. 8, Dr. G. J. Fisher gives the only reference to this form of monstrosity I have been able to find. He gives a cut of a child in which all the extremities are absent, taken from "Hastings, Trans. Med.-Clin. Soc., Edin., Vol. ii, p. 39, pl. 1, fig. 2, Edin., 1826," then makes the following statement: "Amelia, or want of all the extremities, is quite rare. Instances of entire absence of both upper or of both lower limbs are less rare, though not common. The first rudiments of limbs appear in the embryo about the beginning of the second month, being merely slight eminences of embryonic buds. Arrest of development at this stage of evolution would produce the anomalies under consideration." The part that maternal impressions held in the causation of this deformity, I will leave for the reader to speculate on. The scare occurred at about the time when the extremities are commencing to develop in normal pregnancies.

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DERMATITIS AND VESICATION CAUSED BY EUPHORBIA MARGINATA, PURSH.

I have had, of late years, an unusual number of cases of what I took to be "ivy poisoning," and in many cases have been unable to trace any possible chance of exposure of patient to *Rhus Toxicodendron*. But as the cases all yielded to the usual treatment for ivy poisoning, I supposed that a small vine had sprung up about the premises where it was not noticed. About 1875, a number of our lovers of flowers purchased from florists seeds of a showy plant, under the name of "Snow on the Mountain" or "Mountain of Snow." Its floral leaves and bracts are bordered with white, making it very attractive. It was well pleased with our climate and soil, and soon escaped to the streets and roadsides, and is now more abundant than dog fennel. It proved to be *Euphorbia marginata*, Pursh, a native of the plains of Kansas and Nebraska, and like the rest of the spurge family, its juice is milky and gummy. During the summer of 1890 it happened that, in handling some fresh specimens of this plant, I accidentally rubbed a considerable quantity of the milky juice on my neck and under the collar. This produced a decided burning sensation during the afternoon. The next morning I found the skin, as far as the juice had gone, red and thickly studded with a pimply eruption, which subsided in the course of several days by the use of a lotion of sugar of lead and laudanum. I then suspected that here was an explanation of my frequent cases of ivy poisoning, and further observation has demonstrated this to be true.

Its gaudy appearance makes this plant very attractive; children in their plays, and others in collecting bouquets, pluck and handle it frequently. In many persons the juice produces a severe irritation of the skin, resulting in a thick, fine eruption of a purplish-red color, presenting very nearly the same appearance as a case of poisoning by *Rhus Toxicodendron;* except that the eruption is a little finer in the former. I have seen a few cases, in children with unusually delicate skin, where the epidermis was raised, and the whole surface, as far as the juice had spread, was blistered. There is usually much complaint of a burning sensation in the parts affected.

In looking up the properties of this order, I find that a number of the species are credited with producing similar effects. The manchineal, a native tree of the West Indies, is said to produce blisters, followed by bad sores, when it touches the skin. The well-known croton oil is obtained from *Croton Tiglium*, also a euphorbiaceous plant. *Euphorbia resinifera*, Berg, produces the highly irritant gum *Euphorbium*.

I am induced to put my experience on record for the benefit of other members of the profession who may be having an unaccountably large number of cases of ivy poisoning, that they may be on the lookout for cases arising from this cause.

REPORT OF THE SURGICAL CLINICS,

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College,

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

September 27, 1890.

This being my first clinic, let me say a word to the students who are just commencing the study of surgery, and hope at some future time to become surgeons.

While it is true that clinical lectures are the best manner of teaching either medicine or surgery, and that no one can be a safe practitioner without such teaching, it is also true, that the student of surgery who believes that by simply witnessing surgical operations, he will thereby become a good surgeon, will find in the end that he has made a mistake. There is a certain dramatic attraction about a surgical operation, which charms the student and rivets his attention, but that student who has not the perseverance and industry to follow up and study the details of the after-treatment, although he may make a brilliant operator, will never make a safe surgeon.

Let me, therefore, urge upon you the necessity of keeping careful watch of the results following operations. In this way, and in this way only, will you be able to judge whether any benefit has been conferred upon the patient. The patients upon whom I shall operate will be carried into the wards of the hospital, where you will all have an opportunity to witness the after-treatment. If the result should not be successful, it will be a benefit to you to find out the cause of the failure, and to witness the post-mortem examination if possible.

During the winter you will have the opportunity of witnessing a great variety of operations; some of them trivial and attended with but little danger to life, others of the gravest character. They are all of equal interest to you. The first case which I bring before you is one upon which I will operate at a future day. It is one of

EPILEPTIC CONVULSIONS FROM INJURY TO THE BRAIN.

This man, æt. 27, eight years ago, at a picnic, was shot in the back part of the top of his head, a little to the left of the median line, with a ball from a 22-calibre pistol. Dr. Duff removed the fragments of bone, but did not find the ball. The direction of the ball seemed to be toward the centre of the brain. Last May he was seized with epileptiform convulsions, of which he has about two a week. He comes here to-day seeking relief from the convulsions. It is doubtful whether the ball could be found now. It may be either the ball, or some spicula of bone, that is causing the convulsions. Recently an instrument has been invented to locate metallic substances lodged in the body, called the "induction balance." It was tested, but failed, in the case of President Garfield. Since that, it has been improved somewhat, and it may be of some value now. I might also say, that when Dr. Duff trephined and removed the fragments of bone, he also removed a wad and a piece of the hat from the wound. I advise the opening of this wound, for which purpose the patient agrees to come here next Saturday.

OPERATION FOR FISTULA IN ANO.

This man suffers from fistula in ano, which is common in persons with phthisis pulmonalis. I have not examined this patient whether he has phthisis or not. It has been deemed unwise by some surgeons to operate when thus affected, but I have always found it beneficial to the patients to relieve them. Fistula in ano is sometimes caused by abscesses near the anus caused by pieces of fish-bone, etc., lodging within the internal sphincter. There are three kinds of fistula in ano, viz.: complete, blind internal and blind external. There are sometimes as many as half a dozen fistulæ.

We apply Clover's crutch to patients when operating on the perinæum. An abscess in the rectum should be opened early. The reason a fistula does not heal is on account of the mobility of the parts, and if there should be any attempts at healing, they are torn in the act of defecation. The first thing I recommend in operations for hæmorrhoids or fistulæ is the dilation of the sphincter, thus paralyzing it and putting the parts at rest. In preparing a case for operation, a purgative should be given the night before, and an enema before the operation, to thoroughly empty the lower bowel. I now cut open the fistula, then paralyze the sphincter by the insertion of the thumb of my left hand and the index finger of my right, and making considerable force laterally.

Finding the cellular tissue infiltrated with pus, I scrape it out with a Volkmann's spoon, and after cleansing the parts with a solution of bichloride of mercury (1–2,000), I pack it with iodoform gauze.

OPERATION OF EXTERNAL URETHROTOMY.

This patient is suffering from a number of urinary fistulæ, and is a more serious case than the former one. When he was a young man (seventeen years ago) he had a severe gonorrhœa of six months' duration, and as a sequel of which he contracted a stricture.

About six months ago his water was entirely arrested, and likely he had a rupture of the urethra. Urinary fistulæ are ordinarily cured by dilating the stricture. I propose to perform perineal section or external urethrotomy in this case, to divide the stricture.

I passed a filiform bougie a few days ago. I pass it now again, and will pass a tunnelled sound down over the filiform through the urethra, and then cut down to the groove in the sound and divide the urethra. This is the operation introduced by Mr. Gouley, of New York. If I cannot introduce the bougie, I will postpone the operation until such time as I can. No. 8 tunnelled sound is used. Some surgeons let a catheter remain after this operation, but I believe it best not so to do, for it is likely to excite cystitis, and the urine is as likely to pass from the bladder around the catheter as through it. I will now locate the stricture. I will first inject some sweet oil, which is better than oiling the instruments. Taking an olive-pointed bougie, which is the best to locate stricture with, I pass it in about 5 inches.

I have now passed a filiform whalebone guide into the bladder and a tunnelled sound down over it. The median line is said to be the line of safety. I now make an incision in the median line within ½ inch of the anus, and enlarge the incision liberally.

Owing to the infiltration of the parts with urine, they are not in their correct anatomical positions. I have now exposed the groove of the guide, and will now pass a loop of thread on either side of the urethra in order to separate the parts, and with a small-bladed knife I will follow the guide and divide the stricture.

I insert several stitches to hold the parts in apposition, and then allow it to heal by granulation.

October 4, 1890.

FRACTURE OF THE OLECRANON PROCESS.

This young colored man, those of you who were here last winter will remember as the patient for whom I trephined his skull and removed a cyst. While carrying brick, he fell from a height, injuring his head, causing paralysis of one side of the body; in this condition he lay in bed for ten months, acquiring a number of bedsores. In two weeks he was able to walk (after the operation), and some time afterwards he was discharged from the hospital as cured.

He went to work again at his former occupation, and a scaffold fell with him. He fell on his elbow, fracturing the olecranon process. The symptoms of fracture, as you know, are subjective and objective.

In this case the subjective signs are pain, history of the accident and loss of power to extend the arm. The objective signs are, the fragments being drawn upward by the triceps and a depression at the back of the joint. We will dress it with a straight anterior splint, padding it well opposite the joint, so as not to keep the arm completely extended. The splint will be secured by strips of adhesive plaster and a bandage. Passive motion will be commenced in about three weeks to restore the mobility of the joint.

FRACTURE OF THE TIBIA AND FIBULA.

This patient fell and a wagon run over his left leg, fracturing it above the ankle and producing two wounds of the soft tissues. After washing the wound thoroughly with an antiseptic fluid, I cover it with a piece of lint soaked in the compound tincture of benzoin. In a case of this kind, when the wound is not large, it is not well to probe when in doubt as to whether it is a simple or compound fracture; because

if it is simple you may convert it into a compound fracture. A compound fracture is much slower in healing when due to direct violence than when due to indirect.

Do not set a limb too straight, but set it with the natural curve of the bone. This leg will be kept in a fracture box for a week or ten days, and then a plaster dressing put on.

October 15, 1890.

AMPUTATION OF AN ARM.

This man had his right arm caught between the bumpers while coupling cars, and crushed above the elbow. This accident occurred this morning at 1 o'clock, and he was brought here at 8 o'clock.

On looking at the arm, we find a large lacerated wound on the inner side of the arm. On introducing my finger in the wound I find the bone comminuted and the muscles pulpefied, and can pass my finger directly into the joint; so you see the arm is really only hanging by the skin. I find no radial pulsation, consequently the brachial artery has been wounded. After you have determined to amputate a limb, the next thing is to determine where to amputate.

It should always be done in sound tissue if possible. In this, the circular operation which I propose to perform, I make the incision about 2½ inches below where I want to saw off the bone. By the first incision I divide the skin and fascia, then, drawing back the skin, I make the second circular incision and cut to the bone. Then, using a retractor to keep the bone dust away from the tissues, I saw off the bone, first drawing the saw from the heel to the point to make a track.

Then next I look for the vessels, and control them by torsion.

A good plan to stop the oozing of the small vessels is to press on a soft sponge soaked in hot water. It is getting customary, when antisepsis is thoroughly sought for, to dispense with the drainage tube, but I prefer to use it so long as I have success as in the past. It used to be customary not to sew up the flaps for two hours after an amputation, at which time the flaps would be glazed and there would be no oozing whatever. The drainage tube should be so placed that one end should be at the most dependent part, and for this purpose I will put it in independent of the wound, making openings through the flaps. I prefer to put in a row of very deep sutures and one superficially, the deep ones to keep the wound in contact, and the superficial ones the skin. This wound will be thoroughly washed and covered with bichloride gauze. In forty-eight hours we will remove the drainage tube. If there should be a rise of temperature above 101° at any time, the dressing should always be removed and examined for fear there is some infection going on. We put a safety-pin in each end of the drainage tube, to prevent it slipping into the wound. It is necessary, before putting up the wound, to press out all the bichloride solution, as a quantity left in the wound might poison the patient. The wound is now dressed in the usual antiseptic manner. When he is put to bed the stump should be put in an elevated position.

When he comes out of the anæsthesia and has much pain, he will be given ¼ gr. of morphia.

October 18.

I bring before you to-day the patient on whom I amputated an arm at our last clinic, three days ago. The dressing has not been disturbed since. I want you to see every step in this case. As I stated in my last clinic, the temperature of the patient is relied on for indications for taking down the dressings. The temperature of the day following the operation was: morning, 100.4°; evening, 102.2°. On the second day the morning temperature was 99.4°, the evening 100°, and to-day it is normal.

We always expect some elevation. We will remove the dressing, and also the drainage tube, which has served its purpose. To remove the drainage tube, I cut off the safety-pin from the upper end and draw it out by its lower extremity; I then direct some bichloride solution through the wound. You see that the wound looks healthy. As it is too early and there is no tension on the sutures, they will not be removed to-day. I will redress it now in the usual antiseptic method, using a crinoline bandage on the outside. It will now be left a week. He has had no medicine except two hypodermic injections of morphia after the operation.

The second case I bring before you to-day is the patient on whom I performed an external urethrotomy three weeks ago to-day. He passes all his urine by the urethra now, which he had not done for twelve years. I passed a sound every day, since the operation, through his urethra, and will instruct him to pass one occasionally, to keep the urethra dilated. I consider this a very good result.

LITHOTOMY.

This man is suffering from a stone in the bladder. I propose to do the median operation in this case, which is only applicable in small calculi. The raphe is called the "line of safety," not being traversed by any important vessels or nerves. In this operation the forefinger of the left hand is inserted in the anus against the apex of the prostate. Having said this much I will proceed with the operation. It is well to have some water in the bladder, and his bladder being empty now, I will inject a small quantity. Clover's crutch is sometimes applied to a patient on whom this operation is performed, but as it is somewhat in the way of the operator we will firmly bind the wrists to the ankles with a bandage. The buttocks are brought to the edge of the table, an assistant on each side holds the thighs apart. I will now introduce a sound and search for the stone, which I found a few days ago. Withdrawing the sound I introduce a staff and have an assistant to hold it firmly, hugging the upper surface of the urethra.

I introduce the knife directly in the median line, one-half inch in front of the anus, and continue the incision to the anterior extremity of the prostate. I thrust the forefinger of my left hand into the wound, slip the knife in over it, make its point slide along the groove toward the bladder, dividing the membranous part of the urethra and the edge of the prostate. I now withdraw the knife and introduce my left forefinger gently along the staff. Next the assistant removes the staff and my finger enters the bladder and its point touches the stone. I next introduce the forceps over my finger, and you see now I have removed the stone. I examine the stone to see if it has any facets, which would indicate more than one calculus but do not find any. We will now wash out the bladder and close up the wound. This operation (median) was a favorite one of the late Dr.

Albert G. Walter of this city, who in sixty-four operations had but one death.

October 25, 1890.

REVIEW OF SOME CASES OPERATED ON.

I show you first to-day the man on whom, one week ago to-day, I performed the median operation of Lithotomy and extracted a calculus. He is still passing his urine by the wound as well as by the urethra, which will continue yet for a short time. He is feeling well, as he says, and the wound as you see is healing kindly.

The second case I bring before you to-day is the man on whom I amputated his right arm, ten days ago, in your presence. You remember it was a severe crush of the arm, caused by being caught between the bumpers of the cars, and I amputated it, by the circular operation at the middle third. It has not been dressed since a week ago in your presence. It is my rule not to dress stumps more frequently than I have in this case unless there should be a rise of temperature over 100 degrees. This man has been eating and sleeping well since the operation. You remember I put in two rows of sutures—a deep and a superficial one, to hold the deep parts as well as the skin in apposition. You see it has healed by first intention. The silver sutures are still in place, but they have served their purpose and hence I will remove them to-day. There is one objection to wire sutures, that is they are a little painful to remove. You take hold of the sutures with the pliers in one hand and cut them by the other, and then rotate the sutures when withdrawing them instead of drawing them straight out. After irrigating the stump with a solution of bichloride I put on a compress and redress it. This patient will soon be discharged from the hospital. The third case I bring before you to-day is a young man on whom I did a double amputation ten weeks ago to-day. It used to be the custom to amputate at the "point of election", which is about five fingers breadth below the knee, for any and all injuries of the leg or foot below the knee necessitating amputation. In this case I saved just as much as possible of this patient's limbs; the one, as you see, was amputated slightly below the so-called "point of election," and the other a little above. Mr. Hey advocated the amputation at the tarso-metatarsal joint, for injuries of the metatarsus requiring amputation, which is since known as Hey's operation. Mr. Syme advocated the amputation at the ankle joint and Mr. Chopart at the medio-tarsal, both amputations now bearing the names of their first advocates. The rule now is to save as much of the body as possible, but there are exceptions to this rule.

Some time ago I was called to see a boy with a smashed hand. I could have saved the carpal bones, but it has been found that when it is necessary to invade the carpus at all, it is better to go at once to the radio-carpal joint, and amputate at the wrist, which I did in this case.

November 1st, 1890.

OPERATION ON HOUSE MAID'S KNEE.

I want to show you first a case of house maid's knee; this will be a frequent disease in your practice, and it is important that you should know how to manage it. This is an inflammation of the bursa of the knee, between the patella and the skin, it may occur anywhere on the patella, ligamentum patella, or the tibia; as in this case it comes from pressure, this girl being a servant and doing much work while on her knees.

A similar disease may occur in various parts of the body where pressure is likely to occur and where you find bursæ. There is one at each angle of the jaw, one at the point of the chin, also over the acromion of the scapula, over the olecranon process, over the trochanter major, the condyles of the femur, and, as I have said, on the ligament of the patella. In miners who work with their elbows resting on the floor, we have frequently inflammation of the bursa over the olecranon process which is called in that case "miner's elbow." In England those engaged in weaving are required to remain in the sitting posture during their work, causing inflammation of the bursæ over the tuberosities of the Ischii, which is commonly called "weaver's bottom." It is just such an inflammation of the ball of the great toe that what we call a "bunion." These are natural places for them to occur but they may occur almost anywhere where pressure is continously applied. These bursæ or cysts contain serum at first, but by the gradual deposit of organized lymph in the interior of the sac, the cavity is obliterated. The treatment consists of rest to the part and cold applications, or the application of discutients as: blisters and painting with tincture iodine; or in tapping, followed by the injection of iodine. Sometimes these sacs contain rice-like bodies. When these inflamed bursæ are solid, the proper thing to do is remove them by excision, taking care not to injure any neighboring articulation. I now make a longitudinal incision over this bursa, dissect out the contained mass, scrape the cavity with a Volkmann's spoon, then insert a small drainage tube and close the wound with sutures and apply an antiseptic dressing. I will put on a posterior splint to secure perfect rest of the limb. And as the extended position of the limb is very uncomfortable, I will place a large wad of cotton in the popliteal space before applying the splint. A ganglion is somewhat analogous to a bursa, it is developed in connection with the sheath of a tendon. The ganglia contain a clear fluid and rice-like bodies, which are formed of a compact fibrinous substance, due to previous inflammation. The treatment consists in the rupture of the ganglia by forcible compression with the thumbs or by a sudden blow with a book. If these means fail, iodine may be injected, or a seton established or excision, which is attended with some danger of inflammation. As I used continuous sutures in this case allow me to say a word regarding them. In continuous sutures, tie the first stitch, then proceed as a seamstress would in sewing, making the stitches one-fourth inch apart. Always see that each stitch has the right degree of tension. For the purpose of securing the last stitch, draw the thread through double the last time and then you can tie it. These sutures should only be inserted when you use drainage tubes, because no drainage can take place between the stitches. I will show you next the patient on whom I amputated an arm about two weeks ago. I have shown you almost the entire treatment of this case. You see it is healing nicely and making a good stump. It is discharging a little yet. This man is virtually well and will leave the hospital to-day to go to his home.

INFLAMMATION OF THE MASTOID CELLS.

The third case I show you to-day is a patient with a swelling behind his left ear, and it is a most interesting and instructive case. The patient suffers some from nasal catarrh. Twelve weeks ago this patient had ear-ache and for eleven weeks had a running at this ear. This case is similar to that of the Hon. Roscoe Conkling of New York City, in whom you will, no doubt, remember, it was the cause of his death. When you find severe pain in the ear, and pain, tenderness and swelling behind the ear, you can suspect pus in the mastoid sinuses. The most important measure of treatment is to make an early incision down to the bone in a longitudinal direction, three fourths of an inch behind the ear and extending the whole length of the mastoid process. This is known as "Wilde's incision." Mr. Wilde is a native of the old country and the father of Oscar Wilde, who visited this country several years ago. I now make an incision as you see, down, to the skull over the mastoid process. I have severed the posterior auricular artery in this incision. I now with a drill perforate the antrum, one-fourth inch posterior to the meatus externus, in a direction upwards and inwards through the outer shell of bone; having now reached the antrum you see the pus swelling out of it. Having now established a free opening with drainage, I will not go any farther on account of the important structures, which might be injured. I will pack this wound with iodoform gauze and apply an antiseptic dressing.

November 8, 1890.

REVIEW OF SOME CASES OPERATED ON.

I will show you first to-day the lady whom I had before you last Saturday, and on whom I operated for the removal of an inflamed and enlarged bursa over the ligamentum patellae, known as housemaid's knee. I want you to get interested in these cases and see them in their different stages, in order that you may be able to follow them to their termination. The dressing has been removed but once since you saw it and that was three days after the operation, when Dr. Boggs, the resident physician, removed the drainage tube.

This lady has been getting along nicely; by her temperature chart you will see that her average morning temperature was 98 and two-fifth degrees, and the evening 99 and two-fifth degrees. You remember this was a disease of eighteen months standing. As I told you at our last clinic these bursæ occur normally in some situations of the body and they may become inflamed, enlarged and painful, when continued pressure is made to a part.

You remember I sewed this wound with continuous catgut sutures and I will remove them to-day. The proper way to remove a continuous suture is to cut each stitch and then pull them out. Although there is no suppuration in this wound, it will not heal by first intention. It will not be necessary to reapply the posterior splint, because, as you see, when I flex the limb it causes no tension or tendency of the wound to gape. I will put it up in an antiseptic dressing as before. It will be dressed every other day.

The lady will be allowed to get out of bed in a few days, instructing her to be careful not to rest the full weight of her body on it for some time.

ABSCESS IN MASTOID CELLS.

I now bring before you the man that had an abscess in the mastoid cells and for which I cut down and perforated the antrum last Saturday, to allow of the escape of the contained pus. This trouble in this case started from an inflammation of the middle ear, or otitis media, and extended to the mucous membrane of the mastoid cells, the largest of which is called the antrum. In infancy it is a large air-cell and the only cell that is present then. All of these cells connect with the middle ear, and when this pus does not find other exit it is likely to penetrate these cells, causing intense pain.

(To be Continued.)

THE ANCIENT USE OF ANTISEPTICS.

BY EDWARD ANDERSON, M.D.,
OF ROCKVILLE, MD.

During the meeting of the Medical and Chirurgical Faculty of Maryland, held in Rockville last November, I called the attention of the members to page 98 of Bartholomew Parr's London Dictionary, reprinted in Philadelphia in 1819, where he says—calomel mixed with starch and strewed on a pledget of lint is perhaps the best application to the stump of an amputated limb, placing mercury in the same category with the knife and the ligature.

The starch, of course, was added to give bulk, so that a large surface might be covered without the risk of ptyalism. Parr also recommends pyroligneous acid in the treatment of wounds. I rarely use anything but calomel as an antiseptic and I defy any one to produce a better.

My uncle, the late Dr. John W. Anderson, of this town, sixty years ago invariably used either calomel or brown sugar in the treatment of wounds.

Antiseptics may not have been so generally used as now, but some surgeons, no doubt, were as scrupulous in their use a hundred years ago as any at the present day.

The antiseptics, common salt and turpentine, have been employed in domestic practice from time immemorial; salt in the treatment of incised, and turpentine in that of contused wounds.

Lister has said so much about antiseptic surgery that many think that he originated it; he no doubt has encouraged the use of it, but is certainly not entitled to the appellation of—"Father of antiseptic surgery."

A RARE LUXATION AT THE ELBOW.

BY J. J. CONNER, M.D.,
OF PANA, ILL.

Mr. T. P., aged 22, on October 11, 1885, about the middle of the afternoon, while in company with another young man, was driving a buggy along the line of the Wabash railway near Palmer, Ill., when the horse took fright at a passing train and ran off, upset the buggy and threw them both out; T. P. alighted upon his hands and head. On examination there was found on him a slight laceration of the skin just below the right corner of the mouth and a small contusion of the right cheek. The right elbow was enormously swollen on the inner and anterior side just below the crease of the elbow joint, or rather where the crease should be; the arm was bent out-

ward, *i. e.*, convex on the inner side and concave on the outer side. *The head of the radius was found to be under the tendons of insertion of the biceps muscle.*

Treatment consisted in extension and counter-extension, and at the same time the head of the radius was pushed out from under the tendon of the biceps muscle with the thumb applied to the inner side of the head of the radius. Motion there was perfect without one bit of crepitus. The arm was dressed in a simple cooling lotion for two or three days till the swelling had pretty well subsided, when a plaster-of-Paris splint was put on. This, owing to the obtuse and perverse nature of the patient, was only worn for about one week, when he tore it off and in three or four days more went to using his arm again, regardless of my advice and protestations. Recovery was perfect.

It would seem as though such an injury as this could not happen without some form of fracture, but I firmly believe there was none.

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY H. GRADLE M.D.

LECTURE I.

The subject of these lectures will be the consideration of all the occurrences and conditions, both in the body and outside of it, which lead to disease. It is not the intention to detail the cause of each individual disease, but to discuss in general the factors and influences which can injure the organism. The object of such a general review of etiology is to encourage in you the habit of analyzing every clinical case as to the cause and condition upon which the morbid process or processes present depend. For you will soon learn in practice that the recognition of the name of a disease, its mere diagnosis, is not the key that unlocks all its secrets; but that a full insight into its nature depends as much on the knowledge how the disturbance was brought about as on the recognition of the anatomical changes involved. To the logical mind there can be no doubt, that the etiological point of view will sooner or later be the starting point of therapeutics during active disease. For when we consider the wonderful reparative power of the animal organism, its ability to recover from all but actual destructive lesions, as soon as an injurious cause has ceased to act, we can understand that it must be the ambition of the therapeutist to be able to remove or render harmless the causes of morbid disturbances, and to leave the return to the normal state to the self-righting tendency of living system. Such a view does, of course, not preclude the necessity for the surgeon's knife and mechanical devices in all those instances where we have missed the proper time to prevent destruction of parts, or where the causes of disease, even if known, are beyond our control.

In order to use the term "cause of a disease" without vagueness, a few definitions are indispensable, even if they seem trite. We speak of disease whenever the processes of life are deranged in any part of the body. The occurrence which leads to this derangement is hence the cause of the disease. In other words, the manifestations of disease are the reaction of the living tissues to an influence which for the time throws out of gear the normal mechanism of the cells it has affected. According to this definition there can be but one cause for each individual disease. But you will find in most of the text-books various "causes" mentioned in connection with separate diseases. This, however, is a misnomer. All those influences and circumstances which must be taken into account in considering the origin of any disease, besides the one actual cause itself, should logically be called "conditions." The study of all conditions, which either favor or interfere with the action of disease-causes is a very important part of etiology. Often, indeed, a clear understanding of the conditions which determine the occurrence of a disease are of greater practical importance than the identification of the cause itself. In the study of processes as simple as the reaction between two chemical bodies, we cannot ignore the surrounding conditions. Thus, if we wish to demonstrate the blue color obtained by the reaction of iodine upon starch, we must remember that the desired result can be obtained only in cold, not in hot, solution. If we consider how very much more complex than the reaction just quoted are the chemical processes of living matter; how numerous and how unstable are the chemical constituents involved, and how intimate are the relations of one part of the body to another, we can infer how very much more sensitive to all sorts of influences and conditions must be the physiological mechanism, as well as the reaction of the body to injurious impressions made upon it.

Many authors call the one cause of a disease "the exciting cause," and the various influences which favor it "the predisposing causes." Even this term must be objected to, as it can only be misleading to call a cause *that* which is merely a condition, upon which a reaction depends. Besides, we must take into account in etiological studies not only the "predisposing" conditions, but also all factors which interfere with the "exciting" cause.

A logical classification of our subject is not only a gain in convenience, but more so even in its practical applicability. The classification I shall here adopt you will find particularly useful as a guide for therapeutic action. Of course, it becomes useless in those instances where we are as yet completely in the dark as to the cause of an individual disease. From an etiological standpoint we can divide all ailments into

1. Primary diseases.
2. Secondary diseases.
3. Anomalies.

A primary disease is one in which the diseased part is acted upon by some cause originating outside of the body. Thus, a pneumonia is a primary disease, because it results from the invasion of the lung by a microörganism coming from the outer world. Other instances of primary diseases are the actions of poisons, are sunstroke, are syphilis. In all these cases the cause does not preëxist in the body. In secondary diseases, on the other hand, the cause is not an occurrence outside of the body, but a preëxisting morbid condition, or anomaly, within the organism itself. As instances of secondary affections may be quoted thrombosis of an artery, reflex neuroses, paralysis of a nerve from a tumor pressing upon it, strangulation of the intestines in a hernial sac.

Although these instances mentioned represent pathological occurrences that seem to have nothing in common, yet, from an etiological point of view, we can put them into one group, as distinguished from

primary diseases, by the fact that they are not due to any cause coming from the outside, but that they can only occur in consequence of some previous anomaly within the organism. There may, of course, be some conditions of the outer world which favor their occurrence, but these are not the real cause of such secondary affections.

Anomalies must be distinguished from diseases, both primary and secondary, from an etiological as well as from a therapeutic point of view. A disease is an active derangement, which ceases within a short time after its cause has ceased to act. An anomaly, however, is a deviation from the normal structure of a part or organ which persists after the cause leading to it has ceased to act. A disease may terminate either in perfect local recovery, or it may result in a permanent lesion or anomaly. A destructive disease, for instance, causes the loss of a part, or, as the case may be, a cicatrix, while an irritative disease may lead to a permanent new-formation. But not all anomalies are the results of disease; they may have been produced by mechanical causes, as, for instance, deformities or by interferences with the normal growth, as congenital anomalies. Practically, this distinction between diseases and anomalies is of importance, as in the latter group of ailments we cannot accomplish anything therapeutically by attempting to remove a cause which is no longer active or present, while the anomaly itself may be the source of great annoyance, or even the cause of further secondary disease. Of course, the combination of anomalies with still active disease may be encountered in practice as well as the most complex chain of coexisting primary and secondary affections. It is particularly in the combination of diseases which so often appears to the clinical observer as a morbid unity or single affection, that the etiological analysis proves of service; for, by distinguishing clearly between the primary and the secondary disturbances in a given case, and by keeping in view the features incident to the main disease, and separating them analytically from coexisting complications, we are in the most advantageous position to interfere therapeutically. The etiological standpoint also shows us that the same morbid lesion may be due to different causes in different instances, and that it may be a primary disease in one case, but a secondary affection in another. This knowledge, of course, will influence both our prognosis and treatment.

The causes of primary diseases, to which we shall confine ourselves first, may be ranged under the following heads:

a. Physical causes.
b. Chemical causes.
c. Infection or parasitism.
d. Various influences resulting in overaction of the nervous system.

a. Physical causes include all mechanical influences resulting in wounds, contusions, fractures and dislocations. Even in such simple etiological problems as the fracture of a bone in consequence of mechanical violence, we must take into consideration the "conditions" as well as the cause proper, for a full explanation of the results. Thus, for instance, the same force, acting in the same direction, will cause in an adult a fracture near the end of a long bone, while in a child it would have resulted in a separation of the epiphysis from the shaft. Again, a blow which would not damage a healthy bone may fracture another one rarefied by previous disease. In cases of injury from mechanical causes we must also clearly distinguish between the original lesion, and the subsequent infection which may complicate it. The injurious mechanical influence may be both the actual cause of a comparatively trifling disturbance, and the condition permitting or determining a more important subsequent disease due to infecting parasites, as seen, for instance, in tuberculosis of joints following slight trauma, or on a trivial scale in inflamed corns and bunions.

Other physical causes of disease are the effects of heat and cold upon the tissues. A special form of heat influence is seen in sunstroke. As in a body of men exposed to the same solar radiation, perhaps only a few may suffer from this disease; we have here again an instance of conditions either favoring or, as the case may be, opposing, a disease-cause. Thus a dark hat, by absorbing heat, would enhance the likelihood of sunstroke, whereas a light one would reduce the danger. But internal conditions also come into play. Physical exhaustion is known to predispose to the trouble, while a normal cerebral circulation lessens the possibility of overheating the brain.

Electric currents of the strength used in modern industries, or lightning itself, furnish another instance of a physical cause, in this case capable of disorganizing the nervous system.

b. Chemical causes of disease are illustrated by the action of poisons. The present etiological review is not the place to dwell upon details of this subject. Attention, however, may be called to the fact, that a number of poisons produce not only temporary functional derangement, but may also result in structural pathological changes, which can outlast the presence of the toxic agent. Amongst these may be mentioned the necrosis of bones and the yellow atrophy of the liver due to phosphorus, the nephritis from chromic acid, the inflammation of the gums, the pseudo-membranous ulceration of the bowels and the calcareous deposits in the kidney as the result of mercurial poisoning. It is especially in the nerves where inflammatory changes and subsequent atrophy can be observed from the action of various poisons. Of metals, lead and arsenic may act as causes of neuritis of peripheral nerves. Bisulphide of carbon and illuminating gas have also been known to cause symptoms indicating neuritis.[1]

Chronic abuse of alcohol and tobacco is a not infrequent cause of neuritis, particularly of the optic nerve. It is interesting to note that optic neuritis is oftener the result of the toxic influence of alcohol and tobacco combined, than of either poison alone. Even a single excessive dose of quinine has caused, in a number of instances, impairment of sight which, according to experimental researches,[2] is due to atrophy.

In the consideration of poisons from an etiological point of view, special mention must be made of the toxic products developed in different articles of food in consequence of decomposition. Milk and its derivatives, cheese and ice-cream, furnish the most frequent instances of poisoning by bacterial products. The most important one of these has been described by Vaughan as tyrotoxicon, probably chemically identical with diazobenzol. It is not always possible to

[1] See Middleton Goldsmith Lectures by Allen Starr, on Neuritis, Medical News, 1887.
[2] De Schweinitz, Transactions of the American Ophthalmological Society.

distinguish clinically between poisoning due to the decomposing action of bacteria upon food outside of the body, and the effects upon the system of certain bacteria themselves contained in the food, which may continue their chemical activity in the intestines, or even invade the tissues. Instances of poisoning from tainted meat, fish and sausages, are also not rare. A few years ago, many cases of disease and even death were reported in German literature, from the consumption of fresh, but diseased, mussels.

Amongst the chemical causes of disease must be also taken into account the negative action of any of the alimentary principles, that is to say the result of insufficient supply of any one element of food. For the tissue-change necessarily leads to the incessant destruction or elimination of all the chemical material in the body, and if any one of the needed elements is withheld, death is as inevitable as if all food supply were cut off.

Insufficient feeding, however, short of starvation, is not so much an actual cause of disease as a determining condition. For the imperfectly nourished tissues cannot resist other damaging influences as well as the body in physiological vigor. The one disease usually referred to incorrect feeding as its cause, viz.: scurvy, is much more probably due to an infection by micro-parasites, which, however, is possible only under circumstances of malnutrition.

c. Infection, or the existence of parasitic beings on the surface of or within the body of men, constitutes the most important and frequent cause of disease. The parasites are either *animals* or *microscopic plants*. The former are usually the least serious instances of parasitism. Insects or mites may thrive in the hair or burrow under the skin, various varieties of worms may inhabit the intestinal canal, and yet not enough disturbance result to be called disease in common parlance. But more dangerous instances of animal parasitism are also known. The ordinary round worm has caused death by perforating the bowels. A certain form of pernicious anæmia has been traced to the presence of the anchylostoma in the intestines. The entrance of trichinæ into the body is a serious and often fatal occurrence. Filariæ in the blood and lymph-channels are the cause of wasting chyluria, and echinococcus cysts often demand grave operations to avert a fatal issue. Yet from the standpoint of general etiology it is superfluous to dwell any longer on the subject of animal parasites, at least as far as the higher forms are concerned. For there is but a limited aspect common to the different instances, while the details about the biology of the parasites, their intermediary hosts and their mode of entrance into the body can be found in all special works.

Recent researches, however, have shown that animal parasites of the lowest order are probably a more important and frequent cause of disease than had hitherto been suspected. Thus in tropical dysentery an amœba has been found in the colon in such constancy and numbers, that it can be regarded as the cause of that disease. Another instance of an animal parasite causing a very common affection is the "plasmodium" or protozoon found within the red corpuscles in malaria. Protozoa have also been met with in various diseases of animals, but neither the biology of these microörganisms nor their relation to the morbid processes is as yet well known.[3] Various recent claims as to the demonstration of protozoa in malignant growths are more suggestive than convincing.

Amongst the *vegetable parasites* of man, the higher fungi or *hyphomycetæ* require but a passing notice. While various species of fungi have been demonstrated as the causes of different skin diseases, they have been but rarely met with in deeper tissues. In view of the ease with which they can be detected in the midst of animal cells it is not likely that future researches will bring them into greater prominence as causes of disease than we now attribute to them. Further reference to them would be but a repetition from text books on skin diseases.

Of all causes of diseases *bacteria* are the most important in the light of our present knowledge, as they are responsible for the majority of primary diseases, and indirectly for numerous secondary affections. Ever since their discovery 200 years ago the view that they might be the cause of various diseases has often been mentioned, but it rested on mere speculation until Pasteur demonstrated (within a few years prior to and after 1860) the rôle of microörganisms in fermentations and putrefaction.[4]

From this time on there accumulated a flood of observations on bacteria in diseases. But all these researches were merely suggestive; in no instance did they amount to the absolute demonstration of the causative relation of the microörganisms to the disease, until Koch gave the first convincing proof in the case of anthrax in 1876.

Since that time the methods for the study of bacteria have been so perfected by Koch and his school, that our present knowledge concerning the relation of bacteria to disease rests on as firm a basis as any facts in medical science. The opposition against the germ theory, justifiable while it was a mere unsupported theory, has now practically ceased. Whenever a writer of the present day dares to belittle the work of competent investigators his arguments invariably betray his want of familiarity with the standard facts.

The proof that a given disease is due to microörganisms rests on the demonstration of a well-characterized variety of microbes in some part of the diseased body, corresponding in number and distribution to the character of the disease, and not found in health or other diseases. The parasite must be present in every case of that disease if sought for at the right time and with the proper methods. If the patient dies after the disease has passed its height, the bacteria may have been destroyed or eliminated and their absence does not invalidate the conclusions based on their detection while the disease is still active.

The distribution of the parasites must correspond to the localization and character of the disease. In most instances they are limited to some one organ or cavity of the body and the derangement of the whole system results from the absorption of poisons generated by the microbes. Thus in cholera the characteristic bacilli are found ordinarily only in the intestinal canal. In diphtheria the bacilli peculiar to the disease exist only in the pseudo-membrane. If the patient dies of a later complication the diphtheria bacilli may no longer be present at all, while

[3] See an extensive review on Pathological Gregarinæ by L. Pfeiffer in Zeitschrift f. Hygiene, vol. iii, p. 469, vol. iv, p. 402, and vol. v, p. 363.

[4] See the History of the Germ Theory in Löffler's Vorlesungen ueber die gesch. Entwickelung d. Lehre von den Bakterien. Bd. 1, 1887.

other bacteria causing the complication may be found in different parts of the body.

The importance to be attributed to the microbes does not depend on their absolute number, provided only that their distribution and properties account for the features of the disease. In the experimental septicæmia of rodents the number of the blood parasites is often greater than that of the red corpuscles, while in tetanus very few bacilli are found, and those merely in the wound where they entered. But the bacilli of tetanus produce poisons of such toxicity that the amount furnished by the few bacteria present explains the whole course of the disease.

The proof that a given disease is due to a certain species of microörganisms is completed by producing in animals the same disease by means of the isolated microbes. But this is not always possible. There are diseases which occur only in man, or in one species of animals. We know the parasite of leprosy, but we cannot reproduce the lesions of leprosy in any animal yet tried. Likewise the coccus of gonorrhœa fails to grow on the mucous surface of any animal. Moreover, even when animals can be successfully inoculated the disease does not necessarily run the same course or present the same lesions in different species. The animal body is not a dead soil in which a parasitic plant, when sown, will always grow with the same vigor or give rise to the same reaction. The living system resists the parasitic invasion to an extent variable with the species. Yet even when we cannot reproduce the disease experimentally for want of suitable subjects, the demonstration that a definite parasite occurs invariably and in characteristic distribution in a given disease cannot be interpreted otherwise, in the light of our present knowledge, than that the microbe is the cause of that disease.

An indispensible basis for any intelligent interpretation of the facts known about bacterial infection is the doctrine of the specificity of bacterial species. Notwithstanding their minute size, different kinds of bacteria are just as separate and distinct, and as little capable of conversion into another species as are the classes and families amongst higher plants or animals. It is only by ignoring this fundamental fact that a man of the critical judgment of Lawson Tait can combat the germ theory and support his opposition by arguments that may seem of weight to the uniniated. But this is not the place to prove the specificity of bacterial species. The facts on which this doctrine rests can be found in bacteriological textbooks.

While we cannot transform one variety of microbes into another, we can, however, modify the vital vigor and the chemical activity of any one species within some limits by means of the environment. By varying the chemical character of the soil, by altering the nutrition of the bacteria, and by submitting them to different conditions of temperature, we can diminish, or, in some cases, enhance their rate of growth and their tissue change. We can thus change their virulence as parasites. According to the nature of the damaging influence, and the length of time it has acted, the bacteria have become enfeebled only temporarily, or they may degenerate into a permanent race of diminished vigor. Such changes in the virulence of parasites occur in nature as well as in the laboratory. Epidemics, for instance, of scarlet fever vary in severity and mortality from time to time, and this fact we can only refer to the variable virulence of the virus.

If we review the diseases now definitely traced to bacterial invasion, we will find satisfactory demonstration of a characteristic parasite in anthrax, tuberculosis, leprosy, relapsing fever, typhoid fever, influenza, cholera, diphtheria, erysipelas, tetanus, gonorrhœa, rhinoscleroma, actinomycosis, and various diseases peculiar to animals. We will meet with instances of different diseases, due to one and the same parasite according to its localization, in the case of the pneumococcus, the cause of pneumonia, pleurisy, peritonitis, otitis or meningitis, according to the organ which it has invaded. In other cases, diseases which are very similar, if not identical clinically, may depend on different varieties of parasites. Thus, suppuration may be caused by the yellow or the white staphylococcus, or some three or four closely allied micrococci, by the streptococcus, by at least three or four kinds of bacilli and perhaps even by other species. Pleurisy likewise may depend on the pneumococcus, any one or more of the ordinary pus microbes or on the bacillus tuberculosis. The pus microbes, on the other hand, are also responsible for the so-called surgical (and puerperal) fevers, either by circulating in the blood and becoming deposited in internal organs, or by poisoning the system by means of the chemical products which they form in the primarily infected tissues. Again, there are affections in which bacteria do not invade the tissues at all, but vegetate only in the intestinal canal, and cause the symptoms observed by generating soluble poisons. Probably most of the transitory bowel diseases belong to this class, although the evidence on this point is as yet insufficient. It is likely also, though not fully proven, that various constitutional disturbances, even those without striking intestinal manifestations, like scurvy and cystinuria, have this etiology.

There remains a large list of contagious diseases, which we can refer logically only to some living virus, but in which characteristic bacteria have, as yet, not been discovered. In at least one instance, viz., the malarial fevers, the virus now identified, does not belong to the vegetable, but to the animal kingdom. Whether further studies in other diseases will lead to the discovery of other protozoa, of the class to which the "plasmodium malariæ" belongs, cannot be foretold. In spite of much work that has been done on a virus so very accessible and convenient to experiment with as that of cowpox, its nature has not yet been revealed. It has been proven satisfactorily to be corpuscular and not dissolved, it has been known to cling to bacteria accidentally mixed with it so tenaciously as to mislead several expert bacteriologists, and yet no one has ever yet been able to identify it morphologically.

Florence has long enjoyed the reputation of being exceedingly unhealthful, and of having a very defective water supply. Yet typhoid fever is not now, at least, very prevalent, as during the month of January of the present year there were but six deaths in the entire city and commune of Florence. The influenza there during the past winter was also of a very mild type.

SUCCESSFUL OPERATION ON A STRANGULATED HERNIA OF THREE DAYS' DURATION UPON A MAN, 76 YEARS OLD, HAVING PARALYSIS OF THE LEFT SIDE.

BY ROBERT ANDREW KITTO, M.D.,
OF RACINE, WIS.

Mr. Christian G., aged 76; Danish. Paralyzed on the entire left half of his body. The patient had a severe fit of sneezing, which was followed by protrusion of the gut through both rings into the scrotum. Family physician was called on the evening of the second day after the accident. He found the gut strangulated, and all efforts at reduction proved futile. Consultation was had, with the result that nothing could be done for him in consequence of his age and infirmity. I was asked to see the case, which was the evening of the third day following the accident, when I attempted to reduce the tumor under an anæsthetic, which proved to be impossible. Anxious relatives urged that something in the way of an operation be done to reduce his suffering. I agreed with them, and consented to operate at once. I called three assistants, and after a hurried preparation (and, by the way, there was little opportunity to enjoin antiseptic precautions, for the patient with his wife lived in one room), we were ready at 1 A.M. to operate. Ether was used, and the operation was begun.

I made an incision nine inches length, extending from just above the region of the upper border of the tumor down to two inches below the insertion of the scrotum. Each layer was carefully dissected away until the sac was reached. The sac being successfully opened and emptied of its fluid contents, it was then slit up to the constriction, which was carefully and successfully loosened with the hernia knife, there following instantaneously an escape into the abdominal cavity of the gas which had powerfully distended the gut. The gut was then attended to. Examination of the constricted portion showed decided thinning of its walls with several gangrenous patches. Replacement was out of the question in its present state.

The old man appearing to withstand the shock well, I proceeded to excise the necrosed part and unite the ends and replace. I made a circular incision, removing a piece three inches in length, the ends were hurriedly sutured together with the plain interrupted Lembert suture, and the gut returned after carefully cleansing the wound; the sac was removed, the incision was closed, and a drainage tube made of absorbing cotton rolled tightly into a rope about the size of a small lead pencil, when the necessary dressings were applied. The patient was then placed in bed, and hot applications vigorously applied to the entire body, with a $\frac{1}{6}$ gr. morphia hypodermically. Reaction set in nicely, and no untoward symptoms occurred during the following two weeks; at which time hypostatic pneumonia set in, seriously interfering with his breathing and former promising aspect. On the morning of the eighteenth day the patient reluctantly succumbed to the lung complication, which his weakening state could not withstand.

I write this case up only to show that it is never too late to operate in this deadly accident, even when other serious physical defects are present; also, that often the very aged people possess wonderful power of life. Undoubtedly had pneumonia not supervened my patient would have gone on to a complete recovery; hence the heading of my article "A Successful Operation," for I can but view this as successful. It would appear that the hemiplegia in his case did not militate against an operative procedure.

I should like to hear from the profession as regards their experience (if any) with a patient of this man's age surviving so serious an operation.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

February 10, 1892.

(*Concluded from page 300.*)

Dr. L. K. Baldwin in the chair.

G. Betton Massey, M.D., read a paper entitled

METRITIS AS AN INITIAL LESION IN PELVIC DISEASE; ITS COMPLICATIONS AND TREATMENT BY ELECTRICITY.

The attractive field recently opened to surgical gynecologists by the discovery that the ovaries and tubes may be amputated without invariably resulting in the death of the patient has caused an enormous preponderance of current medical literature to be directed toward diseases of these organs. So great has become the furor that little else is heard at our special societies but discussions on the wet specimens thus procured, which are brought in regularly in buckets by certain operators. This singular abundance of pathological material supplied by two organs out of an important group is calculated to make an onlooker who is, fortunately, free from what might be called the operative infection, inquire carefully into its reasons. Granting the peculiarly peccant nature of these organs as a justification, it may be asked why resort should invariably be had to amputation rather than to a more conservative operation. It may be that there is such a thing as a war-time in this work, when, as in military surgery in the field, parts of Nature's handiwork are hastily removed that a more thoughtful conservatism would have restored to health.

But it is not my purpose to discuss at present the debatable questions of the proper management of inflammatory conditions of the ovaries and tubes; they are merely alluded to at this time because it is my conviction that many ovaries and tubes have recently been removed when the real seat of trouble was within the uterus.[1] In examining for tender spots by the bimanual manipulation it is exceedingly difficult to differentiate between a sensitive ovary and a tender uterus, and if one's mind is so constituted that the uterus is entirely ignored, and endometritis or metritis unthought of, a mistake is readily made. One operator declared some two years ago that he did not believe three was such a thing as endometritis. Dragging upon the tender uterus, as he did daily, in his endeavor to find salpingitis, he mistook the purport of the pain excited.

In contrast to this position it may be affirmed that inflammatory conditions of the uterus are the most frequent of all the local diseases of parus women and not infrequently found in virgins. More significant still, it may be said to be either the precedent condition or the nidus of many of the most formidable diseases in this locality, such as certain displacements, catarrhal salpingitis, pyo-salpingitis, ovaritis, cancer of the cervix, fibrosis, and many other lesser troubles.

[1] The grounds for this conviction are derived primarily from a number of cases of post-operative pain seen in private practice and at the Dispensary for Women at Fourth and Spruce Streets. Many of these cases had enlarged and tender wombs when seen by me, and had either been made worse by the operation or left in an unchanged condition.

How great, then, is the necessity for its early recognition and prompt treatment!

The classical studies of this disease found in the books are most instructive, though the pathological conditions described in the several varieties of endometritis are of but little clinical use to us, since we do not often study these cases in the dead-house, and as yet but few specimens have been presented at the societies. Whether the case is one of interstitial, follicular, or polypoid endometritis, it is, moreover, of secondary importance in face of the present apparently well-founded belief that they are all examples of that protean disease of mucous cavities—microbic invasion. The several forms of cervicitis, endo-cervicitis, endometritis, and interstitial metritis are clinically distinct and largely separable, it is true, but the fact should not be lost sight of that they are all alike microbic in origin, even subinvolution being septic or trauma-septic, and hence are all mere local variations of the same disease.

The recent developments of bacteriology teach us plainly, then, that simple endometritis—a bacterial colonization of the endometrial gland—is the primal step in these progressive conditions. Whether the morbific germ is one of the common staphylococci of pus or some other organism, it seems clear that to its conquest of the local phagocytes is due the hyperæmia, hypersecretion, and hyperplasia of the glandular substance of the endometrium, which, later, extends to other situations by either direct continuity of structure or by lymphatic absorption. The reason for the peculiar susceptibility of the uterine cavity to such invasions is easily conceived when we remember that the intra-uterine mucosa is distinctly glandular—that the endometrium is, in fact, a gland rather than a mucous membrane.

The method by which the uterine cavity becomes the culture-medium of these infections deserves some consideration. On reviewing the conditions present, particularly the ubiquity of pus-germs in the centres of population, one is disposed to ask why an infection of this region is not universal instead of the exception. The natural, healthy mucus and the temperature would seem to be an ever-present invitation. Why, then, are germs normally absent above the internal os, though so abundant below that point? The answer has never yet been given; but it can be none other than that of a body of sentinel phagocytic cells stationed in the cervical cavity to war upon morbific germs. Remove these sentinel cells, or lower their vitality, and the resistance they present is overcome by the outer hordes.

The ineffectiveness of these vital sentinels in puerperal infection is manifest. By a flank movement or brutal charge the seeds of destruction are planted well beyond the lines. An endometritis results, which is the cause rather than the effect of the subinvolution of the muscular fibres. In the nulliparous, and particularly in virgins, the method of invasion is not so clear, though we do not have to look far to find it. The prevalence of early stages of metritis—in other words, of endometritis—in perfectly pure virgins is a daily result of my inquiries. At sixteen, seventeen, and particularly between seventeen and twenty-three, in this climate, a uterine leucorrhœa is by no means uncommon in weak and delicate girls; and we do not have to adopt the harsh and generally untrue statement of Schroeder as quoted in the most recent work on this subject, Pozzi's *Gynecology*, that the germs are introduced by masturbation. The condition of the general health of these patients is the real causal factor. The germs are always in the cervix normally unless the hymen be imperforate, and they are enabled to penetrate within the uterine cavity by reason of weakness on the part of the sentinel cells. A girl whose blood is impoverished by inherited weakness, to which is added the many imperfections in our methods of fashionable education, is in but a poor condition to marshal sentinels and defences against any morbific attack. The logic of this view is sustained by the methods of many rational physicians in dealing with this condition in such cases. Let the blood-making organs once be restored to health, and the invaders, *if not too deeply entrenched*, will be driven out.

At its inception this affection is usually subacute, if we except the more virulent forms of puerperal metritis, and runs its course without material disturbances of temperature, like the analogous affections of the nasal cavity. Even after the disease has extended so far as the Fallopian tubes, with the production of muco-purulent accumulations, the temperature may still be normal. In my experience, an acute stage is lacking, the onward march of the affection being as insidious as it is gradual. Beginning as an endometritis or endocervicitis, the patient is only conscious at first of a leucorrhœa which becomes more abundant and irritating to the vagina and vulva, and should be the sign for active and intelligent interference on the part of her physician, though of late a do-nothing policy has been advocated by some. It has been said that the womb has its natural secretions, like the nose. That is, of course, true, but it should be remembered that the nasal secretion is not normally muco-purulent; as soon as pus-corpuscles habitually occur in either secretion, the existence of a diseased condition is manifestly proven.

The subsequent stages and the effects of this catarrhal endometritis are natural consequences. Accompanying the hypertrophy of the endometrium into fungoid and cryptose conditions we have a direct stimulation of the connective tissue cells of the parenchyma. Trophic changes in this situation and general fibrosis of the body of the uterus result. Coincidently, or at a later period, an extension upward along the mucous tract occurs, and salpingitis, ovaritis, or both, add their burdens to the suffering woman. I shall not recount the local symptoms of this conglomerate affection beyond the statement that at various periods in its course we find changes in the quantity and quality of the secretions, erosion of the os from irritating discharges, hypertrophy and tenderness of the cervix and corpus, combined with a reasonable movability of the uterus as a whole. With these facts you are all familiar. On the reflex symptoms some doubt has been thrown of late, but the best proof that pains down the limbs, in the abdomen, and in the back, with or without nervous prostration, are caused by this "irritable" uterus is given by the disappearance of such symptoms as a result of local treatment. The reason for the doubt lies in the lack of neurological training in many gynecologists, who have mistakenly treated such diseases as hysteria, neuralgia, lateral sclerosis, and locomotor ataxia as mere nervous manifestations of pelvic disease. I have elsewhere reported an instance of removal of the ovaries for pains that were due to an aggravated spastic condition; and the physicians that follow my service at the Spruce Street dispensary recently saw an even more ludicrous error of a well-known colleague: A woman applied for the relief of a pain in the side in the region of the floating ribs, making the statement that she had been under treatment for it at a neighboring dispensary for several years. The treatment had been directed entirely to the pelvic organs, and much pressure had been unsuccessfully brought to bear on her to consent to a removal of the ovaries. In spite of this treatment her pain was somewhat worse. In glancing at her back I was led to request that the corsets be removed, which revealed a most marked case of scoliosis, with corkscrew twist of the vertebræ. A properly fitting brace gave her complete relief from pain. Even a slight acquaintance with orthopædies would not hurt gynecologists; an elementary training in neurology is certainly essential to correct diagnoses in this specialty.

Besides errors of diagnosis it is possible that the present tendency to minimize the effect of uterine disease in causing backache and other neuroses is due to the failure to cure such conditions by removing scar-tissue from the cervix. Failing to cure these cases by cutting out this harmless reparative effort of nature and by removal of the appendages, the remainder of the woman is kept in bed for long periods of time under the theory that the rest-cure was the proper thing after all, and that rest was the most essential part of the rest-cure.

Clinical proof of the dissipation of these baneful symptoms by the use of means that combat the initial microbic affection and its nutritional and hypertrophic consequences is the best proof of their correlation.

A recent case will, I think, present this proof in a strong light. A healthy young lady fell a short distance from a hammock, striking the end of the spine. She suffered immediate pain, and two weeks later applied to an intelligent gynecologist, who treated her for retroversion, and later for inflammation of the ovaries, so far as could be ascertained from the patient. After some early relief the condition became stationary. At this time the case was seen in consultation by Dr. Baer, of this city, with a view to removal of the appendages, which was, however, not done for some reason. Sixteen months after the beginning of the disease the patient entered my private sanitarium in the following condition. Subjective symptoms: continuous, deep-seated scratching pain about an inch and a half above each ovary; a tender pain in the sacrum, and an inability to walk more than two squares without an intensification of these symptoms and great prostration. Objective symptoms: external evidences of perfect health, marred only by coldness of the extremities. Internal examination showed considerable leucorrhœa; uterus apparently small and in normal position, but when elevated on the finger in the posterior cul-de-sac extremely painful. Thinking the case one of posterior parametritis or ovaritis, she was treated by the vaginal galvanic method, in conjunction with general electricity and massage for the incipient nervous prostration that was becoming manifest. Considerable improvement resulted, but no headway was made with the peculiar pain in the ovarian regions until it was recalled that nothing had been done directly for the endometritis. The sound, now passed for the first time, showed that the apparently small uterus had a cavity exceeding three inches. An intra-uterine positive application was therefore made, of a strength of twenty milliampères, and this had the happy effect of checking the so-called ovarian pain permanently. Four subsequent applications of the same kind were made for the control of the discharge and the patient was restored to health and has remained well, now for some time.

This patient had been kept for three months on a lounge by her previous attendant, under the theory that this supposed essential of what is called the rest-cure would be of service. Shorn of its institutional control and electricity, this fashionable mode of treatment is a two-edged sword that is responsible for more than one case of chronic invalidism. Used with such essentials, including direct electrical applications to the uterus in the class under consideration, these cases in the borderland between the domains of gynecology and neurology may be permanently restored to health, though he who essays but one part of the treatment will meet with frequent failure and disappointment.

For therapeutic purposes cases of chronic metritis are divisible into two classes, that much resemble the divisions made by the late George M. Beard in cases of sexual neurasthenia in the male. In the one class the affection occurs as a purely local disease, the nervous organization of the individual being so robust that it fails to become affected by the local disturbance; in the other class, a far less degree of local trouble may be found associated with profound depression and disorder of the nervous system—a disorder that seems greatly disproportioned to the local disease.

The treatment of the first class of cases is naturally entirely local, and may generally be carried out in the office, when the disease has not yet ascended to the tubes and ovaries. Various modes of treatment have been efficaciously employed, though many are now abandoned as either ineffective or dangerous. I shall limit my remarks to the local use of electricity, first prominently brought forward by Apostoli, whose conclusions have been more than confirmed by my own experience. As in other subacute microbic affections of the glandular membranes, the galvanic current presents a typical alterative action which may be brought to bear directly upon the diseased surface, and by means of applicators that are in themselves innocuous because elastic, easily inserted, and lacking the dangerous piston action of the cotton swab. The contrast with acids or other cauterants that must be inserted by force is very great; no hooking or pulling on the cervix, or other harsh methods, are necessary, and the local action is, moreover, strictly measurable and controllable. By reason of its greater antiseptic effect the positive pole is usually preferable, though in the later stages of the disease, when the endometritis has eventuated in a hyperplasia, the galvanic alternative method is better than the use of a single active pole. In subinvolution, particularly, the alternative galvanic method within the uterus is quickly curative, accompanied at each treatment by a primary faradic application.

Judging from results, the local electrical treatment seems to act in a threefold manner, each special element of the method varying in usefulness in different cases. One part of the action is a local alterative effect on the endometrium; another results in a quickened absorption of hyperplastic tissue, and still another in stimulation of the muscular fibres to immediate contraction and increased tone. The first action is most important in fungous and hæmorrhagic cases; hence, the positive pole should be used alone, with a duration of some minutes at each application. As the possibility of causing an immediate increase of muscular tone in the uterus increases, the alternative method becomes more valuable; and in recent subinvolution the faradic current alone is usually sufficient.

If, at the initial examination of a case, a reasonable doubt is present as to the preponderance at that time of the original metritic trouble or of a secondary extension into the tubes and ovaries, the intra-uterine method should be preceded by a more or less prolonged vagino-abdominal galvanic treatment; and in these cases, as well as in the second class here described, in which the nervous system is affected, the value of institutional treatment is enormous. By a combination of internal and external electrical treatment, massage, diet and partial rest, these cases can be almost invariably restored to health, unless pus-cavities have formed—an event that is much rarer than some would have us believe. It may take weeks to accomplish these results, it is true; but it is also true that it takes years for the patient to recover health after the performance of a castrating operation.

212 South Fifteenth St.

Discussion.

Dr. John C. DaCosta: I think that cases of pure acute endometritis are rarely seen. The cases that I generally meet with are chronic cases, in which there is metritis in combination with endometritis and hyperplasia of the uterus. The treatment of acute endometritis should be as different from that of the chronic cases as that between an acute inflammation of the eye or legs and a chronic inflammation of them. In the acute as well as the chronic form injections are of much value. The reason that injections

often do not benefit is that they are not properly given; they should be given with the woman in the recumbent position, in such a way that the water will reach the neck of the womb and distend the vagina, opening out the folds in the anterior walls, and washing away the poisonous discharge. In order to do this, the patient should be instructed to keep the vulva closed with the fingers of the left hand until the vagina is filled and distended, and then allow the water to escape. This process can be repeated as often as necessary. In chronic cases nothing will do more good than a good, free bleeding. Three to five ounces of blood should be taken, and the woman will often get up off the table with all the pain gone. Another good plan of treatment is by the thermo-cautery burning a hole one-quarter of an inch deep into the cervix. Ten days after such an application the uterus will look entirely different. Dr. Baldy's method of treatment by dilatation and curetting in these chronic cases is one I have used for years, and is of value; for these uteri often have diseased membrane and fungous granulations, keeping up a continual irritation, which the scraping will relieve by removing a cause of irritation and setting up an acute inflammation instead of the chronic one. I should rather hesitate to follow Dr. Baldy's plan of injecting tincture of iodine in the uterus. I think a safer way is to take a piece of cotton in the dressing forceps and swab the whole surface with the preparation of iodine. If you use such a preparation as I do, twice as strong as Churchill's tincture of iodine, you will find that there is very little hæmorrhage. The preparation which I use is one part of iodine, two parts of iodide of potassium, and four parts of glycerin. This will cause a decided contraction of the uterus; if it does not, give ergot in doses of a teaspoonful every hour until the bleeding stops. I do not like the idea of tamponing the uterus. I do not think that it is necessary; it is better to stop the bleeding before the patient is left.

Dr. Charles P. Noble: Dr. Baldy's paper discusses a very important subject, and one upon which every practitioner of experience has decided views. Concerning numerous special statements in the paper, there is a general concurrence among gynecologists; but in my judgment the general teaching of the paper is not sound, and if allowed to go to the general practitioner for his guidance, I feel certain that evil results will follow.

It seems to me that Dr. Baldy has gone back ten years to the point where gynecology was when I was a student; and not only are we led backward, but are given no good reason therefor. A word with reference to pathology: A mere discharge from the uterus does not indicate endometritis. We are indebted to Dr. Emmet and others for disproving the idea that every uterine discharge indicated endometritis. This may come from various constitutional derangements, such as a feeble heart, general debility, phthisis, constipation, or a sluggish portal circulation, and if these are remedied the discharge will disappear. This class of cases must be eliminated strictly when discussing endometritis. Some even go so far as to deny that there is such a disease as endometritis. I have not studied the endometrium microscopically; but clinically I believe that there is endometritis. Another important point in the study of endometritis from the therapeutic standpoint is whether the disease is or is not complicated. Treatment which is beneficent in uncomplicated endometritis may be and is dangerous where complications exist. Endometritis is often the forerunner of salpingitis, which is the forerunner of peritonitis. Old chronic peritonitis cases generally have endometritis. We also know that cases of uterine fibroid often have endometritis. It is apparent that the treatment of such cases should be essentially different from the treatment of uncomplicated endometritis. Where the endometritis is uncomplicated, I think that treatment directed to the uterus is moderately safe, although even here we may produce complications from intra-uterine applications, and especially from intra-uterine injections. The experience of our predecessors has proved this, and has shown that most cases of endometritis can be cured without treating the endometrium directly. I have supposed that we had heard the last of intra-uterine injections. In the hands of our teachers the practice was found dangerous and was given up. When the cervix is dilated widely, as after curetting, the danger is probably slight; but when done in the office without such dilatation it is distinctly dangerous—how much so any old book on gynecology will prove.

I regret that the limited time allowed for debate will not permit me to discuss the subject further; but it seems to me that the points presented are very vital ones, and that they have been neglected by Dr. Baldy.

Dr. M. Price: I thank God that I am not a woman, if a woman is to be treated in this way. The question has often been asked, Why is it that we have so much pelvic trouble? I say that the paper to-night answers that question. Every sort of acid and application has been forced into the uterus. It has been burned by the hot iron. It is no wonder that we have endometritis. Why should we not have endometritis with complications extending to the other organs and to the pelvis, requiring removal of the diseased tissues? The same men that advocate this treatment admit that they have had to remove the appendages a few weeks after dilatation.

Dr. Baldy: The treatment which is so vigorously denounced referred simply to uncomplicated endometritis, not to endometritis associated with fibroid tumor or pus tubes, or any other serious pelvic or abdominal disease. I should treat these troubles as the occasion called for. Where endometritis is uncomplicated, it can be dealt with without the slightest possible bad effect. My cases are put to bed and kept there until safe from all inflammatory trouble. Intra-uterine injections can be made in one's office with impunity if done carefully. The cervical canal, in some of these cases, is so patulous that it would admit a tube twice the diameter of the nozzle of the syringe. I use the syringe almost daily, and have not seen the slightest trouble from it.

Dr. DaCosta spoke of scarifying and curetting to produce bleeding. The curette in my hands generally produces that effect. If the bleeding is moderate, I do not use ergot. When I use ergot, I give it in fair doses to produce contraction of the uterus. I select the cases which I subject to the treatment described, and I care not if I have gone back ten or twenty years if the treatment brings about the desired results safely. I am continually receiving patients on whom abdominal section has been done, in whom the uterus is large and heavy, and all the old symptoms remain. I scrape the uterus and remove a large quantity of débris from some, and in many cases this gives relief.

The International Medical Congress of 1893.—The profession in Italy is sparing no pains to make this meeting as conspicuous a success as the best of its predecessors. At a recent sitting in Rome an organizing committee was formed, with Dr. Bacelli as its President; Professor Edoardo Maragliano, of Genoa, General Secretary; the Commendatore Professor Pagliani (head of the Public Health Department of Italy), Treasurer, and the Commendatore Signor Ferrando, steward (*economo*). There were also elected by ballot the heads of the fourteen sections over which the work of the Congress is to be distributed—to wit: Anatomy, Physiology, Clinical Medicine, Gynecology and Obstetrics, General Pathology and Pathological Anatomy, Pharmacology, Surgery and Orthopædics, Psychiatry and Neuropathology, Ophthalmology, Dermo-syphilopathy, Legal Medicine, Hygiene, Laryngology and Otology, Naval and Military Sanitation. The committee is at this moment engaged in constituting local or sub-committees for the whole kingdom, to consist of the leading practitioners of every province. All this procedure is on the lines of the Berlin committee, which will also be imitated in giving to each provincial representative a distinctive badge, to be worn during the Congress. The committee, moreover, is proceeding to the election of foreign committees with a view to secure the presence at the Congress of the leading members of the profession in all parts of the world, so as to make the gathering as truly an international one as possible, worthy of its predecessors and worthy of Rome. The time of meeting has been fixed for September, the month in which the climate of Central Italy is at its best, when in Rome there is no risk whatever from malaria, and when the profession, particularly of Northwestern Europe, can best be spared from home.—*The Lancet.*

A Precaution to be Observed in Douching the Peritoneal Cavity.—Dr. Alexander Duke, in a note to the *Lancet*, says that he has noticed that water just poured into the receptacle out of a boiling kettle will, when allowed to flow from the end of a rubber tube, be found almost cold for the first ten seconds or so. This is due to abstraction of heat by

the six feet or more of tubing. It is a wise precaution therefore to allow the water to flow awhile through the tube before using it in douching parts where a slight chill might be very serious, as in the abdominal cavity after laparotomy.—*Medical Record.*

CAUSES OF THE REMOTE RESULTS OF PHIMOSIS.—The remote results produced by phimosis can be readily understood by studying the anatomical distribution of the nerve supply to the penis. The sympathetic nervous system, with its delicate make-up, and its peculiar susceptibility to irritations of any nature certainly finds a locality in this organ where its singular function is demonstrated: The inferior hypogastric or pelvic plexus, situated as it is by the side of the bladder and rectum, has free communications between the second, third, and fourth sacral nerves, and liberal communications with the internal pudic, a branch of the lower part of the sacral plexus. After uniting with the pudic, the two are distributed to the corpus cavernosum and spongiosum, urethra, and in fact to all parts of the organ. The knowledge of this fact is quite sufficient to explain why any pathological irritation at the periphery should be followed by a similar condition in a remote organ, if long continued, supplied by the same set of nerves. The pudic nerve, taking its origin from the sacral plexus, distributes its branches to the urethra, skin, and muscles of the penis. The sensitive nerves from the mucous surface of the end of penis interlace with the motor nerves supplying the bladder, and any irritation applied to the periphery may be followed by a muscular contraction of the bladder. This is only the reverse of the condition existing in stone in the bladder. The moment the stone comes in contact with the irritated mucous membrane of bladder when empty, it produces a contraction of its muscular layer, and the pain is felt with greatest intensity in the glans penis. It is the friction of the nerves upon the surface of glans penis which brings on the emission and erection associated with sexual intercourse or masturbation by exciting associated muscular contraction of the muscles of penis and those concerned in ejaculating the semen. In infants the inhibitory action of the brain over the spinal cord is still in abeyance, and reflex action is more uncontrollable. In these cases there is an exaggerated sensitiveness of the senso-motor centres. This condition is one favorable to the full manifestations of remote evil effects of a constant peripheral irritation.—*Kan. Med. Journal.*

THE INFLUENCE OF THE CLIMACTERIC UPON FIBRO-MYOMATA. Müller (*Archiv. f. Gynak.*) has made a careful study of this subject based upon 109 cases. He found that while in many cases the tumor evidently diminished in size after the menopause, in nine instances it was clearly proved that the neoplasm continued to grow; such an increase in size was noted in women aged fifty-six and seventy-nine respectively. He infers that it is not safe to trust too much to the curative influence of the menopause. In opening the discussion Werth took occasion to differ from Hofmeier regarding the effect of castration. The removal of the ovaries had, he believed, a direct atropic influence upon the tumor. When menstruation ceases, its vascular supply is diminished, but if the hæmorrhages continue atrophy does not take place. Tait's statements on this question were valueless. Benckiser stated that in examining a fibroid uterus removed three months after castration had been performed, he found the same atheromatous changes in the vessel walls which were so often observed after the climacteric. This was a form of obliterating endarteritis which Thoma had described as a result of extensive arrest of the capillary circulation of an organ. Veit said that he had seen large myomata increase in size in elderly women. He did not expect retrograde changes to take place in the tumor before the age of fifty or fifty-four. Progressive increase of the neoplasm after the climacteric must be due to some unusual source of blood-supply. Fritsch had found that the occurrence of both the artificial and the natural climacteric arrested the growth of the tumor. If it continued to grow, it was usually due to cystic degeneration of the neoplasm.—*Am. Jour. Med. Science.*

THE VALUE OF BICHLORIDE OF MERCURY IN THE TREATMENT OF URETHRITIS.—Brewer (*Internat. Jour. of Surg.*) reiterates his confidence in the efficacy of bichloride of mercury in the treatment of urethritis. His method was as follows: At the first visit the patient was instructed in the proper use of a syringe, and was given a large amount of a solution of bichloride of mercury, varying in strength from 1:16,000 to 1:50,000, according to the sensitiveness of his urethra and the stage of the disease. This he was instructed to use twice daily, by taking ten injections in the morning and ten at night, holding each one in the urethra one minute to imitate as nearly as possible the result of irrigation. The patient was seen three times a week. As soon as the discharge lost its purulent character, bichloride was suspended and a mild astringent was substituted, preferably bismuth suspended in water. In the fifty-five cases treated in this way, five were not benefited, after an average employment of the method for seven days. In the remaining fifty cases, the average length of time necessary to affect a change in the discharge from pus to thin watery secretion was a fraction over eight days. The discharge entirely disappeared on an average of twenty-one days. Epididymitis occurred in three of these cases and posterior urethritis was developed in two. The reporter very fairly states that these statistics are of little value from a scientific point of view, since the cessation of the discharge can by no means be considered as an index that the disease has been cured. He offers his conclusions not so much on the basis of these cases as upon a very large personal experience, and states positively that the judicious use of bichloride of mercury in cases of acute gonorrhœal urethritis is attended with better results in subduing the painful and disagreeable features of the disease than is any other agent. The recovery is more rapid and permanent, and the frequency of inflammatory complications is very greatly reduced.—*Therapeutic Gazette.*

DIETETIC VALUE OF PINEAPPLE JUICE.—Some time ago the late Dr. V. Marcano, of Venezuela, noted that pineapple juice contained a proteid digesting substance. Recently, Prof. R. H. Chittenden, assisted by Messrs. E. P. Joslin and F. S. Meara, have investigated the matter fully, and announce facts which are likely to give to the succulent pineapple a prominent place in dietetics.

Pineapple juice is an acid fluid of specific gravity of 1.043. An ordinary pineapple yields 600 to 800 cubic centimetres of it. The proteid-digesting power is quite remarkable in its intensity. Three ounces of the juice will dissolve ten or fifteen grains of dried albumen in four hours. The action takes place in acid, neutral, or even alkaline media, thus resembling trypsin more than pepsin. It acts best in neutral solutions. The pineapple juice contains also a milk-curdling ferment.—*The Medical Age.*

WITH the deepest regret we learn that the doors of the insane asylum have closed upon Roberts Bartholow. What an ending for such a life! To the very last, no evidence of mental alienation appeared in his lectures or his writings. The habit of a lifetime's assiduous labor carried him along in the well-worn grooves, although outside of them his malady was easily discernible. Hard work, no rest, no Sabbath, no vacation; by such means his powerful intellect carried him to the forefront of his profession; but at last outraged Nature reached her limit of endurance, and the break-down was complete.—*Medical Times and Register.*

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SATURDAY, MARCH 12, 1892.

A PERNICIOUS OSSEOUS DISEASE (LYMPHADENIA OSSIUM.)

A pernicious form of osseous disease is the subject of a Vienna clinical prelection by PROFESSOR NOTHNAGEL, given in full in two recent numbers of the *Press and Circular*. The changes of structure discovered by autopsy, were unusual in extent, having invaded the entire skeleton and obliterated the medulla of the bones by a perversion of that force or those forces whose "elaboration should constantly proceed in the healthy hæmatic organs." The case was that of a male, aged twenty-four years, hitherto healthy, with good family history, and living in fairly hygienic surroundings. He was first a "Schwizer," or cowherd, and later a soldier in a small Tyrol barracks. His attack dates from eighteen months ago, with fever and pain in the breast and limbs, without appreciable cause. The temperature was not recorded accurately until a month before death. Sweating was profuse at the outset of the attack, and also in the later months. Intermissions in the paroxysms of pain and fever were about two weeks in duration, with excellent health, as regarded subjective symptoms, in the intervals; later, however, the attacks became more frequent and more intense, occurring in the evening and with a periodicity resembling that of tertian malarial fever. The patient became pale and emaciated. The sternum and long bones of the extremities showed deformity from thickening. There was a right-sided exudative pleurisy which increased gradually until death. The spleen was slightly increased in area. The urine exhibited no albumen or sugar, but indican was in excess. The blood revealed oligocythæmia and oligochromæmia, and under EHRLICH'S coloring commingling apparatus there was reported poikilocytosis, the erythrocytes showed a marked disparity of diameters—ranging from microcytes to the normal red cell—and a few of the red corpuscles were observed to contain single nuclei; the leucocytes were not greatly changed. The blood was examined at different times for the parasites of malarial fever, but none were observed. Bacterial examinations obtained only negative response.

The autopsy was made by PROFESSOR KUNDRAT on November 17, or six weeks after the patient's entrance into the hospital. The condition of the bones was the most striking feature of the case. Every bone of the spine, pelvis, shoulders, the sternum, ribs, clavicles, all the long bones, the carpals and tarsals were affected. The unchanged bones were the phalanges and those of the head and face. A thick layer of osseous deposit, as if covered with a thick infiltrated periosteum, caused the exterior deformity. All the long tubular bones were expanded at their upper portion by a greyish-white infiltrated earthy matter. The interior of the long bones, and of the larger spongy bones, was occupied by the same metamorphic deposit as appeared on their exterior. In a few places the muscular insertions were infiltrated with the same substance. The marrow of the bones, with the exception of a remnant here and there, had disappeared. No bending or twisting of the bones was present as is described to occur in *osteitis deformans*. The lymphatic glands were found enlarged, in some cases twice and even thrice their normal size. During life they could be felt to be soft and large, and the post-mortem confirmed this condition; they being in no way indurated. When cut, the glandular tissue appeared congested, due to a hyperplasia of the follicular elements, but otherwise it had a normal appearance.

The pathology of the disease seems to hinge upon a deranged hæmatic process, affecting chiefly the regeneration of the red corpuscles. The leucocytes remained almost unchanged, indicating that they were derived from lymphatics and spleen and not from the marrow of the bones. The red corpuscles were greatly reduced in number and presented a wide range in regard to their diameters, thus conveying the thought that they were the imperfect product of the spleen, unaided by the better results afforded normally by the marrow of the bones. All investigators are not agreed as to the part which the bone marrow plays in the formation of the red corpuscles, but this case would appear to bring that function as far to the front as has been taught by any of them. The argument by analogy disposes us to believe that the pathology in any case which would arise from a functional or anatomical disorder of any one of several organs, physiologically working together for the same end, would overtax the others and create in them a compensating hypertrophy. Thus, when the spleen is extirpated, a compensatory activity is found by MOSLER to be thrown on the medulla ossium and lymphatic glands. In this case, the medullary struc-

ture was almost obliterated, and practically inverted the splenic experiment, throwing back a compensation of function on the spleen and lymphatic glands and augmenting the volume of those organs. These changes were recognized during life and abundantly confirmed at the post-mortem table. This remarkable case is differentiated by NOTHNAGEL from acromegaly, and one or two other forms of osseous disease, and designated "lymphadenia (or lymphadenoma) ossium," due to a gradual obliteration of the medulla, "in a manner not yet demonstrated by experiment, but probably induced by a compensating force for the altered state of elaboration that should constantly proceed in the healthy hæmatic organs."

HAND DISINFECTION.

The complete disinfection of the hands preparatory to obstetric or operative work, particularly abdominal surgery, is so essential that the recent observations of DR. HOWARD A. KELLY[1] are deserving of the widest publicity.

The common pus-producing germs, especially the *staphylococcus pyogenes albus*, are found abundantly on the hands and about the nails of everybody. To remove them and render the hands perfectly aseptic is by no means easy. The most certain method, and therefore the one to be followed, seems to be the plan which DR. KELLY advocates.

Sixty-five experiments were made to test the adequacy of soap and water alone. The hands were thoroughly scrubbed with strong brown soap and hot water from ten to twenty-five minutes. In nine instances the hands were found to be aseptic, but in these nine instances the hands had been washed in bichloride of mercury solution the day before.

Immersion of the hands in solution of bichloride of mercury as strong as 1:500 was found to be insufficient to actually destroy the microörganisms. After immersion in this solution, the epidermis did not yield cultures, but if the hands were subsequently treated with a *sterile* solution of ammonium sulphide, living germs could be obtained from the epidermis. The bichloride inhibited the growth but did not kill the germs, so that when the mercury was precipitated by the ammonium sulphide, the germs immediately commenced to grow.

By similar experiments, lysol, and also peroxide of hydrogen were found to be inadequate. The method which yielded the best results, and which in fifty experiments rendered the hands aseptic in forty-four instances, was the use of potassium permanganate and oxalic acid.

This method, as described by DR. KELLY, is as follows:

"1. Scrubbing the hands, with especial attention to the nails—not more than one millimetre in length —for ten minutes, in water frequently changed, at about 104° F.

"2. Immersion of the hands in a solution of permanganate of potash, made by adding an excess of the salt to boiling distilled water, until every part of the hands and lower forearms is stained a deep mahogany red or almost black color. They are then transferred at once to a saturated solution of oxalic acid until completely decolorized, and of a healthy pink color. This decolorization is accompanied by a sense of warmth, due to chemical reaction, and a sharp stinging wherever there is any abrasion of the epidermis.

"3. Washing off the oxalic acid in warm sterilized water."

[1] Amer. Jour. of Obstetrics, No. 12, 1891.

PRONUNCIATION OF THE WORD "QUININE."

A friend of ours who has been unsettled in his mental attitude about this word, in consequence of consulting the various dictionaries, has fallen into the habit of pronouncing the term differently every other time he speaks it. Others there are who resort to the subterfuge of using *quinia*, which is really a confession of incapacity in managing the difficulties of *quinine*. The *Century Dictionary* virtually dodges the word by giving three pronunciations. Apparently it gives preference to one which does not appear in *Webster's Unabridged* at all. The latter seems to insist on the full sound of "q" in both of its phonations. The late Mr. James Parton, in a biographical sketch of the Countess of Chinchon, the vice-regal dame of Peru, whose name is immortalized in connection with the powder of the bark of the tree of the realm now lost to Spain, tries to give the true derivation of the word. "The original Peruvian word," he has found in written language to be "*kina* or *quina*, which has the sound of *keena*, with accent upon the first syllable, so given both by the natives and the Spaniards. Hence there is a reason for the common English pronunciation of the name, *keneen*. New England physicians appear to prefer the straightforward method of their own language and pronounce it as though it were an English or a Latin word. The reader may take his choice, for the dictionaries sanction both." This testimony appears to settle for us the "k" sound of the initial consonant, but it would also forbid an accentuation of the final syllable. This latter usage is almost invariable with the authorities adopting the "k" initial-sound. In the *International Dictionary* of Dr. Billings, preference is given to the "q" sound, with the accent thrown upon the final syllable. Dr. Gould's *New Dictionary* authorizes the same consonantal sound with the accent on the penult. So that we have from four not very widely separated centres of lexicography at least six different pronunciations of the word,—enough surely to be bewildering to the inquisitive practitioner. The weight

of evidence seems to favor the "k" initial-sound and the accent on the final syllable.

DIPHTHERIA.

A few weeks ago we called attention to the diagnosis of diphtheria, and to the meaning of the term, and urged that it should be used only in a clinical sense, and to indicate the formation of a false membrane.

Quite recently, JULES SIMON,[1] in a clinical lecture upon the diagnosis of the anginas in children, has treated this subject in a masterly way. He classifies exudative anginas as follows:

A. Pultaceous exudation.
B. Membranous exudation. { *a.* Diphtheritic. *b.* Non-diphtheritic.

The pultaceous exudate is whitish, but slightly adherent, readily removed with the end of the tongue depressor, and is rapidly broken up in a little water. The membranous exudate, on the other hand, is thicker, tougher, fibrinous, cohesive, elastic, and does not dissolve in water. As examples of the pultaceous form of exudate he mentions that found in the *beginning* of scarlatina, the exudation of thrush which has extended to the tonsils, or the pultaceous mass found in herpetic tonsillitis.

The membranous anginas are divided by SIMON into the diphtheritic or non-diphtheritic, according as they are produced by the KLEBS–LOEFFLER bacillus on the one hand, or by other microörganisms, pneumococcus or streptococcus, on the other. The distinction is purely a bacteriological one, and cannot be made clinically without the aid of the microscope, as SIMON admits. As SIMON says, "TROUSSEAU, with his marvellous clinical sense, endeavored to separate the common membranous anginas from the true diphtheritic anginas, but the clinical elements of this distinction were too subtile and too deceptive. It was abandoned until bacteriology revived it."

We are still in the dark as to what microörganisms may yet be discovered, besides those already known, which are capable of producing false membranes. And of course it is not known what may be the secondary effects of such microörganisms. Furthermore, it may be asserted positively, that sufficient time has not yet elapsed to show that false membranes, other than those produced by the KLEBS-LOEFFLER bacillus, are always benign, or if malignant, differ essentially in their effects from those produced by the latter microörganism. Even the clinical differentiation of pultaceous from membranous formations in the throat is by no means always easy or certain.

In view of these facts, we urge that the term diphtheria shall be reserved as a clinical one, and be used in the sense of false membrane, upon mucous or wound surface. It will then be an easy matter to distinguish such species as belong to this genus, in a suitable manner, such as "LOEFFLER diphtheria," "streptococcus diphtheria," etc., while any attempt to limit the term diphtheria to the specific form "LOEFFLER diphtheria" must lead to confusion, and to dangerous results.

[1] La Semaine Médicale, January 13, 1892.

RELIABLE DRUGS.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Will you give us your opinion, editorially, as to the value of "Tablet Triturates" and "Compressed Tablets." I, as well as many of our profession, would like to know the most reliable *forms* in which to use medicines, and I am often disappointed in the effects of pills, as they seem liable to become inert or inactive by becoming insoluble, etc., in the stomach. Maybe the two first mentioned forms of medicaments are better than pills. Yours, etc.,

W. C. DORSET, M.D.

The advances made in the way of manufacture of elegant pharmaceutical preparations, during the past very few years, have been great, and one of the manifestations of this advance is shown in the tablet and triturate preparations, in the use of which our experience has been quite favorable.

Our correspondent reflects unfavorably on manufactured pills. In the use of manufactured pills, tablets, granules and triturates, it is essential to know that the preparations have been recently made. A gelatine or sugar coated pill will in time become absolutely insoluble in the alimentary canal. Triturates and compressed tablets are not so likely to become insoluble, but it is always a prudent precaution to take, to assure one's self that all such goods are reasonably fresh, and that they are the product of a house known for its reliability. Among the things a man most earnestly wants in all cases of sickness, is a profound faith in the remedy he is dispensing.

Our fathers had fewer remedies than we have, but they often understood their physiological action better. "Broken" and full doses, weighed and measured on the blade of a jack-knife, meant a good deal of certainty of action.

Elegant pharmaceutical preparations are the outgrowth of our higher educational systems, and are a most important part of the practicing physician's armamentarium, and whether adjacent to a skilled apothecary, or ten miles from a pharmacy, the practitioner must have the best he can obtain. In fact, it is his bounden duty to his patient to have the best.

The best, an inferior, or an inert preparation, may mean recovery, prolonged illness, or death. Such, then, being the vital importance of pure drugs, it should be made a penal offense to offer for sale those which are adulterated, or even partially inert from deterioration, from age, or other cause.

PRELIMINARY PROGRAMME

Of the Section of Neurology and Medical Jurisprudence, to be presented at the Detroit, 1892, meeting of the American Medical Association:

The Neurotic Sequelæ of Zymotic Diseases, David Inglis, Detroit.

Discussion on Electrical Execution, A. D. Rockwell, New York.

The Relation of Physical to Hernial Protrusion through the Abdominal Walls, Thomas H. Manley, New York.

Aphasia, Philip Zenner, Cincinnati.

Consent in Medicine and Surgery, Clark Gapen, Omaha.

Three Phases of Paramyoclonus and the Use of Phonograph in a Case, Clark Gapen, Omaha.

Moral Insanity and Insane Morality, O. Everts, College Hill.

Responsibility in Will Making, Henry A. Chaney, Detroit.

The Inebriate Diathesis, Its Causes and Nature, T. L. Wright, Bellefontaine.

Infantile Hemiplegia with Aphasia, Joseph Eichberg, Cincinnati.

Surgical Interference with Cerebral Diseases of Childhood, Frank P. Asbury, Jacksonville.

Special Localization, Archibald Church, Chicago.

Hysterical Concomitants of Organic Nervous Disease, C. H. Hughes, St. Louis.

Lateral Spinal Sclerosis and Its Treatment, W. H. Walling, Philadelphia.

Feigned Insanity, F. W. Harmon, Carthage, Ohio.

"A Healthy Brain is Necessary to a Free-will," C. G. Comegys, Cincinnati.

Heredity in Primary Degenerations of the Nervous System, Sanger Brown, Chicago.

The Law of Periodicity in Inebriety, T. D. Crothers, Hartford.

Psychiatric Demography in Chicago, Jas. G. Kiernan, Chicago.

How Shall Responsibility be Measured in Criminal Cases? A. B. Richardson, Cincinnati.

Some Recent Researches and Possible Investigations Regarding the Establishment of Personal Identity, Irving C. Rosse, Washington.

Nerve Regeneration after Suture, W. H. Howell, Ann Arbor.

Titles not announced, Landon Carter Gray, New York; Richard Dewey, Kankakee, L. Bremer, St. Louis.

HAROLD N. MOYER, Chairman,
434 W. Adams St., Chicago.

G. R. TROWBRIDGE, Secretary,
Danville, Pa.

PROPHYLAXIS OF AFRICAN FEVER.—At Blantyre, a Scottish settlement and mission near Lake Nyasa, in Central Africa, there is published a little paper called *Mission Life and Work*. In an article referring to the ravages of malarial fevers along the common routes of travel—almost wholly by water-ways—the following statement is made: "Twelve grains of quinine with five drops of eucalyptus oil have been taken every third day during a journey lasting three weeks, from Quilimane, at the mouth of the Zambesi, up into the Lake Country; no fever developed at that time or since." The writer believes that the immunity was obtained by this combination of the *oil* of eucalyptus with quinine, taken at regular intervals. As an antimalarial combination, in districts where quinine alone does not suffice, this suggestion seems worthy of trial precisely as proposed. If any of our readers see fit to make trial of it, will they kindly notify us of their results?

UNIVERSITY OF THE SOUTH.—The organization of this institution, located at Sewanee, Tenn., is similar to that of the University of Michigan. Its founders are aiming at a high standard of requirements from their students. The very existence of such a school in any locality has an elevating tendency, and in this instance bodes a better day in the new and rapidly rising South. The managers of some of the older and more largely patronized schools will do well to look to their laurels, lest they be rudely awakened to a new condition, with a demand for better service.

THE COMMITTEE appointed at the last meeting of the American Medical Association to consider the best means for promoting the prosperity of the sections of the Association will hold an adjourned meeting in the Hotel Cadillæ, Detroit, Mich., June 6, at 3 P.M.

Members of the Committee are requested to notify the Chairman of their intention to be present at this meeting.

The Committee would esteem it a favor if each member of the Association would communicate in writing his or her views concerning the best measures for promoting the development of the sections. Such communications may be sent to the Chairman of the Committee. JOHN S. MARSHALL, M.D., Chairman,
9 Jackson St., Chicago.

COMMITTEE ON CONFERENCE OF SECTIONS.—Gentlemen who were appointed members of this committee at the last meeting of the American Medical Association, will please send their addresses to Dr. John S. Marshall, No. 9 Jackson street, Argyle Building, Chicago.

SELECTIONS.

THE REPORT OF THE BRITISH LEPROSY COMMISSION is said to be approaching completion. It is understood that it will prove of a somewhat reassuring character so far as India is concerned, since at the present time the number of lepers of this dependency is under what it has been said to be, 50,000. The Commissioners are also of opinion that the disease is not of an hereditary character, and its propagation by vaccination is very rare indeed. Leprosy is, according to the report, to be regarded as a specific disease. In Norway the disease is very much on the decline, owing to the segregation and rigid rules enforced by the Government, at the instigation of the profession, and it is thought that the disease will to a certainty be stamped out in a very few years. —*Medical Press.*

AS AN after-effect of that pest, the influenza, comes the

nervous break-down of the doctors. The heavy work and prolonged anxiety of the last three months is followed by its legitimate consequences: insomnia, neurasthenia, and general collapse of mind and body. Those that are wise do not try to take the imperatively needed rest at their homes, but go off to some quiet spot where they can sleep. On many persons mountain air has a remarkable hypnotic action. Probably those who reside in elevated places would find sea air exercise a similar influence. New Yorkers appear to experience a similar effect when they come to Philadelphia.—*Medical Times and Register.*

The International Health Association will meet in the city of Mexico, in November, 1892. The Association at present comprises the United States, Canada and Mexico, but it is hoped that the Central American Republic will also join it at the next meeting. Dr. Watson, the Secretary of the Association, while traveling in Mexico, induced the health authorities of that Republic to enter into a plan of International and Interstate notification of the outbreak of contagious and infectious diseases, such as already exists between the United States and Canada, by which every State, Province and town are immediately advised of the appearance of disease in any foreign locality, of its nature, the number of cases, and other particulars.

A New Discovery—M. F. Weyman states in the *Medical Age* that he has succeeded in showing and demonstrating the parasite causing chalazia to form in the Meibomian glands of the lids. Physicians thought for a long time it was a mere retention cyst. Pathologists soon showed it to be a granuloma. This discovery, however, added difficulty to the subject of etiology, because all admitted that long-continued irritation was necessary for the production of granulation tissue. The fungus explains all this. It is made up of a heavy mycelium, and produces abundant spores. A section placed in a few drops of a 33 per cent. solution (aqueous) of caustic potash, will soon dissolve, if gently warmed. The mycelium alone remains. The demonstration is exceedingly simple. He has given the parasite the name of fungus chalazicus.—*Medical Review.*

Leprosy in the United States of Colombia.—The Colombian Government has become alarmed at the rapid increase of leprosy in that country, and is considering the advisability of establishing a leper colony on one of the islands off its coast. In two of the States alone the number of lepers is estimated at 30,000.—*Medical Record.*

Grip Mortality.—According to the State Board of Health mortality report just issued, out of a total of 123,878 deaths in New York State during 1891, it is estimated that 10,000 were due to influenza. The death-rate for zymotic diseases was 178 per thousand, as against 169 per thousand last year. The deaths from influenza were distributed over the whole State.

The Diagnosis of Gastric Ulcer.—In the course of a recent discussion on ulcer of the stomach in one of the London medical societies, Dr. Routh said that electricity assisted in the diagnosis of gastric ulcers; if there were really an ulcer the pain would be intensified on passing the constant current through the painful spot, whereas if no ulcer existed the current would afford relief.

Salicylate of Soda in Pleuritic Exudation.—Dr. Oerl has, during the past five years, treated nine similar cases of pleuritic effusion with salicylate of soda, after other remedies, such as phenacetin, pilocarpine, etc., had failed, and, with the exception of two instances, the results were favorable. In these two the resorption was only partial. The author concludes: 1. Serous pleuritic exudations of long standing may be removed by the administration of the salicylate of soda. 2. The salicylate has in exudative pleuritis, just as in polyarthritis, an apparently specific effect. 3. The fact that, so far as experience with this remedy has gone, no new collection of fluid is observed, makes surgical interference in serous pleuritic exudation not only not imperative, but, indeed, puts operative procedures in the back-ground. —*Medizinal Zeitung.*

Creosote in Influenza.—French journals recommend five-centigram pills of creosote in rhinitis and laryngitis due to influenza. Twenty or thirty may be taken a day, as many as one hundred in six hours having been administered in a certain instance.—*The Medical Age.*

On the Treatment of Anæmia.—James F. Goodhart, M.D., F.R.C.P., in the *American Journal of Medical Sciences*, summarizes his conclusions on this subject as follows:

First, absolute rest in bed for ten days or a fortnight—three weeks is none too much for some cases—and they should not be allowed to take much exercise of any kind for the six weeks that their treatment lasts.

Secondly, they must be fed with good, wholesome food—four meals a day—beginning with milk and egg, which can be taken in the fluid state, and thus stowed away almost regardless of appetite. Good meat and vegetables can soon be added, and each meal should see some addition until a reasonable quantity is taken.

Thirdly, comes the iron, as already detailed; and

Fourthly, any mild aperient that may be necessary.

It is not my purpose to advert to the dangers that attach to the anæmic state. Whether they are few or many, it cannot be that this disease is an unimportant one, although it is so common and so generally remediable that one might well think it so. Unfortunately, it is so very common that the public have no idea of its importance as a disease, and therefore it requires some courage to send a patient to bed for a fortnight and to prescribe a Lent where physic shall replace the accustomed fasting.

But, as I am dealing with the point of curability of these cases, I should like to say that I have several times seen it stated that, in distinguishing between pernicious and this form of anæmia, the pernicious form tends to relapse; the chlorotic form, not. This has not been my experience; quite the contrary. These cases relapse after a time, and it is necessary to tell them that it will be so, and that at the first indication of pallor or breathlessness, or, it may be, amenorrhœa, they must return to their remedy for a short course of three weeks or so. It is a curious disease and has, I believe, a large nervous element in its production; but this I feel sure of, that, by its obstinacy and its tendency to relapse, it betokens a rather important constitutional vice, and that it is not a mere intercurrent affection that is treated and done with.—*The Medical Age.*

Removal of Filth at Quarantine.—Since the outbreak of typhus fever in New York, the quarantine officers in Boston have devoted especial attention to Russian Jews. Nine from the steamer "Norseman" and forty from the "Huron" were removed to the quarantine station, and were compelled to take a bath and remain until their clothes were thoroughly cleaned.

The Law of Periodical Function in Women.—Ott (*Weiner Med. Presse Archiv. f. Gynæco. l.*) reports some observations, not exclusively upon menstruation, but upon the various vital processes occurring in women during the period of generative activity. These processes correspond in time to the hæmorrhage—are associated conditions, with a dependent relation to it. Observations upon temperature, pulse, and blood pressure indicated that vital activity attained its max-

imum preceding the menstrual period, and declined at its commencement or immediately before. Sphygmographic tracings, muscle strength, and excretion of urea suffer similar variations. Observations were made at a certain hour each morning during prolonged periods, sometimes extending into the menstrual periods, upon heat radiation, muscle strength, pulmonary capacity, inspiratory and expiratory force, the tendon reflexes, in healthy women placed under the same condition; and a physiological functional periodicity of the female organism was demonstrated. To establish the connection between menstruation and this periodicity of function, it is necessary to determine if the rhythmical variations are independent of menstruation. A large number of observations made by Dr. Schichareff, under the guidance of Ott, upon pulse, temperature, and blood-pressure in girls between the ages of 8 and 13, and in women between the ages of 58 and 80 years showed that no such periodical variations of physiological functions occur in females during the periods in which they are not capable of conceiving, and in which they do not menstruate.—*The Canada Lancet.*

THE IMPORTANCE AND THE NECESSITY OF NATIONAL HEALTH SERVICE.—(Anniversary Address at the eighty-sixth annual meeting of the Medical Society of the State of New York, at Albany, N. Y., February 3, 1892, by A. Walter Suiter, M.D.)

After much thoughtful consideration, I have determined to invite your attention briefly to some topics relating to the public health, and to some of the existing anomalous and contradictory situations which confront us in the Governmental system under which we live.

There is no more truthful saying than the oft-repeated maxim, "Public health is public wealth;" and in all the studies connected with political economy the preservation of life must, of necessity, be an important factor. Health and wealth are reciprocal terms. Give health to a Nation, State or municipality, and wealth and general prosperity will be the natural consequence. It has been conclusively shown, by statistical observation, that human life has a distinctly calculable financial value, and the material profit to the public weal of properly observed sanitary laws may, therefore, be accurately and instructively estimated.

Sanitary science is not of recent origin, but has ever, from the earliest times, engaged the thoughtful attention of men. Hippocrates, the immortal father of medicine, five hundred years before the Christian era, gave to it its first great impulse, when besought to aid the magistrates of Athens in their sanitary regulations, during the prevalence of the great and devastating pestilences of that ancient date.

The Mosaic code of laws prescribe the most careful sanitary directions and restrictions for popular guidance. They were thus made religious observances, and were always faithfully followed by the Jewish nation, and are practiced by the people of that race to the present day. It is said that "in mediæval and modern history they have often, even down to our own times, been spared the ravages of epidemics, when their Christian neighbors were perishing around them."

History informs us that in ancient Greece there was a chief medical officer of State, who was called the ἀρχιατρός. This officer was selected for his superior qualifications, and he was universally regarded as a most important functionary. Great attention was paid to the subject of the public health, and as medicine was believed to be a divine art, no department of the government was more popularly respected.

Under the Roman Emperors there were regularly appointed State and municipal health authorities. They were organized into boards and divided into two classes, one of which, the Palatinate, was a part of the national government, and the other, called *archiatri populares*, was attached to the municipalities and towns. The latter were organized into colleges or councils in the various towns throughout the Empire, and they were not only required to carefully guard the public health, but to them the additional duty was assigned of supervising the courses of study in the medical schools; and no physician could legally practice the medical art until his qualifications had first been passed upon by this board of archiaters, and reported to the magistrates who granted the licenses. It thus appears that these were boards of health and boards of medical examiners combined, and that in that remote period the State properly recognized the relation of the educational qualifications of the physician to the public health.

It is interesting to note how history seems to be about to repeat itself in these modern times; but still more interesting to observe how much time and argument have been required to bring the public, and especially its law-making bodies, to a true appreciation of a public health service in its relations to the State.

During the Dark Ages very little can be found upon the pages of history relating to public sanitation, but they teem with mournful descriptions of ravaging epidemics and the powerlessness of the people to stay their devastations. Ignorance and superstition reigned supreme, and the "visitation from God" idea prevailed. The first regulation of which there is record relating to public health, in this period of history, was the enactment of a law for the prevention of infectious diseases in Venice, in A.D. 1127. This was followed, two centuries later, by the establishment of quarantine by the Venetian authorities, owing to the prevalence of the leprosy in Italy and France.

During ancient, and most of modern times, it may be said that the measures adopted for the preservation of the public health were entirely of an empirical nature, and had no scientific basis; and the science of sanitation is, really, of very recent origin, practically having its birth when the intelligent study of vital statistics, within the present century, gave to it a mathematical character, and thus began its march toward a place among the exact sciences. From this reliable beginning within the past half century wonderful progress has been made, until it may be stated that there is, at the present date, no civilized nation on the earth that has not an organized system for the protection of human life and the prevention of disease.

Preventive or State medicine has come to be a distinct department of study in England, France and Germany, and to some extent in the United States.

In England there is a College of State Medicine, and by recent enactment no medical officer of health can be appointed without he possesses a diploma in public health.

Stimulated by threatenings of a great epidemic of pestilence in 1871, the American Public Health Association, a voluntary organization composed of the most eminent sanitarians of the country, was formed. It had for its object "the advancement of sanitary science, and the promotion of organizations and measures for the practical application of public hygiene."

This body exerted a most powerful influence upon the public health legislation of the country, and especially upon the much agitated question of the establishment of a central authority; and chiefly by that influence the law of 1879, creating the National Board of Health, was passed.

That Board consisted of seven members appointed by the President from civil life, and four *ex officio* members representing the Army, Navy, Marine-Hospital Service, and the Department of Justice, and was charged with the duty of obtaining information on all matters relating to the public health, advising with the executives of the several States in

relation thereto, and to have control of all matters relating to the public health, both external and internal.

Unfortunately for the country, the duties of the National Board expired by the limitation of the act in 1883, and Congress refused to grant the necessary appropriations for the continuance of its work, and thus, although the Board is still in existence, it is entirely shorn of its powers, and we are practically in this great country, which boastfully assumes to lead all others in enlightenment and civilization, without an organized central system of health administration, in which regard we are far behind the progress of the age.

One of the greatest benefits accomplished by the National Board while it had active existence, was the influence exerted toward the establishment of health systems for the States and municipalities throughout the Union. The impetus which it gave has resulted in the organization of State boards in nearly every State, all of which are doing most excellent work, and in turn are fast completing systematic and efficient municipal organization of a similar character; with the present prospect that at no distant date there will be no municipality or township without its local sanitary board.

No true and patriotic American citizen would permit himself to rest contentedly under the imputation that his National Government, founded upon the unalterable principle of equal and exact justice to all its people as to "life, liberty, and the pursuit of happiness," is not the greatest, the grandest and most promising among all the civilized nations of the earth. By its wise and beneficent laws, its social system, its material progress and power, its wonderful resources, its charitable institutions and public schools, it deserves and commands the admiration of the world; and yet is easy to demonstrate that in respect of that most important and highest function of a State—the protection of the lives and health of its inhabitants—our Government to-day, when compared with other enlightened nations, occupies a position singularly inconsistent and anomalous, and contradictory, quite, of the eternal and immortal principles to which it owes its birth.

Having directed attention to the meagre and unsatisfactory condition of public health legislation from the establishment of this Government, it now becomes pertinent to inquire, Should there be a national public health service in the United States, and what should be its character and scope?

All the experience of nations and, indeed, that of this country during a brief period, proves the affirmative of the first proposition. Enlightened public opinion, public safety, popular education, and the combined interests of the great commercial communities, demand it.

The advancement of medical science, the stimulation of original and experimental research into the ultimate causes of disease, and the means of prevention and cure, require the powerful aid of the national resources for their development.

There has been and is a mistaken idea that a national health system has no further province than the establishment of quarantine regulations as a defense against *foreign* pestilences, and that such a service is needed only when threatenings of such calamities are apparent. There can be no greater misconception of the true scope and purpose of a central health department in a government than this.

While it is by no means proper to depreciate the desirability of an effective quarantine, or to belittle its importance, it must be remembered that much more is needed to protect the health of a nation than methods designed only for the purpose of warding off the few foreign diseases which exceptionally visit our shores.

Cholera and yellow fever are indeed to be dreaded, but can it be said that they are more formidable or important causes of death than many of the infectious diseases which are indigenous to our soil?

Let the statistical records of diphtheria, typhoid and scarlet fevers, and last—and greatest—consumption, furnish the answer.

The scope of a national health department should be, in great part, educational in character, and the regulation of the external quarantine stations, which is now safely intrusted to a subordinate but efficient bureau of the Treasury Department, should be but a tributary division of the general system.

This system, then, should comprehend far more than the mere adoption of means and methods for the prevention and subduing of possible pestilential visitations. It should be an organization "with every needed scientific appointment" for the elucidation of all the intricate problems connected with the care and protection of health and life within our borders, whether dependent upon causes foreign or domestic, "and fully capable of tracing out all the hidden sources of disease, whether confined to the air, the soil, the water or the food; in the dwelling, the workshop or the manufactory; in the public school or the place of resort. Everything which affects the development, growth, maintenance and long life of the individuals or classes of a community, falls legitimately within the scope of its inquiry."

It has been said that "ignorance of the laws of health has conscripted more people for the grave than all the battlefields of the world," and that "the great plagues which swept over Europe during the Middle Ages caused more deaths than all the wars of a century." Hence the greatest function of the State would seem to be to provide the means for the education of its wards, the people, to the proper observance of the laws of sanitation, without the scientific application of which untold suffering, direful disaster and premature death must be the inevitable consequence.

A central or governmental health system such as I have indicated and would propose should not, then, merely include the search for the means to ward off and combat threatened pestilence. It should also comprehend the thorough investigation into the causes, both remote and immediate, of the pestilence itself; and such researches should not be allowed to depend, as is now the case, upon the private sacrifices of the personal comforts and opportunities of the noble devotees of science, to whom the constant demands of the *res angusta domi* are ever present, and whose only hope of reward is the consciousness of having contributed toward the alleviation of human distress, and the possibility of an immortal fame. It should include within its scope the fostering of prolonged and exhaustive experimental researches into the ultimate principles of all the great and hidden physiological and pathological questions of our time. It should further include the investigation of all that relates to the causation of the many infectious diseases which may be considered native to this country.

It is a notorious and much to be deplored fact that experience proves that our National Government, through its appointed representatives, has always paid far less attention to the value of *human* health and life than to that even of plants and animals, and I have been much impressed with the inconsistency of its position in this respect.

The National Government has never yet lent the aid of its immense resources toward the endowment of any continued or uninterrupted effort in the line of experimental research in any department of science in which the preservation of the health and life of its citizens are concerned. It has persistently refused to grant adequate funds to the branches of service which have been established, even when impend-

ing calamities have made the need of protection imperative.

The National Board of Health and the Marine Hospital Service, both of which I have mentioned, and both of which are so organized that, with proper and adequate appropriations they might institute investigations into the nature and causes of the diseases which afflict the human race, that would result in incalculable benefits to mankind, have always been hampered by lack of sufficient funds to properly discharge the duties for which they were designed.

In this connection let me quote from a recent report of the Marine Hospital Service. In speaking of the investigation of the nature of yellow fever undertaken by the department, and insufficiently patronized by the Government, a distinguished officer says: "It will be acknowledged that our means of combating this disease, whether as hygienists or therapeutists, are very unsatisfactory. . . . It is a matter of very serious importance, and should receive for its solution very liberal aid from the Government of the United States.

"The disease may strike at any time on our shores with a deadlier hand than foreign foe. Patriotism grows exultant over political platforms wherein are mentioned the means of defence against an armed invasion, but not a voice is raised for public health; and yet that flag for which millions are voted to uphold its honor with gunpowder will be found flying at half-mast over the vessel that brings pestilence to our shores. Costly public buildings are erected, expeditions are sent to the north pole, but the Government has been slow to make appropriations for the establishment of necessary quarantine stations, and has never yet made any sustained effort toward investigating this or any other disease."

With reference to the National Board of Health, a most ridiculous situation presents itself. It has had a constitutional existence for a decade, but was emasculated and deprived of its power after three years of most excellent work, which gave to the cause of sanitary science the greatest impulse it has received in this country for a century, by the refusal of congress to appropriate the necessary funds for its continuance. During the time it was sustained it had a most vigorous existence, and demonstrated in an emphatic manner by its accomplished results the value and importance of a public health service to the people of the United States; it employed experts and instituted investigations into a great variety of scientific subjects pertaining to public sanitation; it sent commissions abroad to study the causes and means of prevention of the foreign infectious diseases; it began a most comprehensive investigation into the subject of the relation of soils to sanitation; it assisted and encouraged the organization of State and local boards of health throughout the country; and, it is stated, more than thirty subjects relating to sanitary science of national importance, which could not be properly studied except by Government aid, were especially investigated and reported upon by this board during the time the funds were supplied.

It brought into concert of action all the State and municipal health authorities, and by this method succeeded in suppressing the greatest epidemic of yellow fever that ever visited our shores; it established a systematic steamboat and railroad inspection; organized refuge stations upon isolated islands for infected vessels to be properly fumigated; edited and published a weekly journal, which was generally distributed and contained complete reports relating to the sanitary condition of all countries with which we have commercial intercourse.

The law which incorporated this board made it a most representative organization, and it is doubtful if any other method which can be proposed will ever serve the public interest to better advantage.

Seven of its members were selected from the most eminent sanitarians of civil life, and three to represent the hygienic branch of the Army, Navy, and Marine Hospital Service, and one to represent the Department of Justice. And yet it was possible, under our sometimes curious political methods, for a junto of legislators, ignorant of the scientific purposes of the organization, by a few specious and even silly arguments, to inhibit and bring to a disastrous close all the benevolent undertakings which it had so auspiciously inaugurated. False ideas of economy were allowed to prevail, appropriations were denied, and nothing now remains of that once vigorous public service but its name, its fame, and its dignified constitutional organization.

I call attention to these facts more especially to show how forceful is the argument which calls for the establishment of a health department in this Government, and how abundant is the testimony that, with proper and adequate encouragement given to it by public endowment, we could without doubt lead all the nations of the civilized world in the inauguration of researches and reforms of the utmost value to the comfort and happiness of mankind.

It is a most humiliating fact that in all these respects, owing to the shameful neglect of our law-making bodies, we are placed in a position far behind that of all the other enlighted nations of the world, when our institutions, abundant natural resources, and substantial advancement in all that pertains to progress in civilization unitedly demand that we should *lead* rather than follow.

Why should Germany, France, and England be permitted to claim a monopoly of all the wonderful discoveries of the present age? Have their scientists greater inventive genius or brighter intellect than those of our country? Must we concede that in the governmental system of those countries there is greater or more paternal regard for the lives and welfare of their citizens?

There is an easy way to solve these problems, and it is largely to differences in the political systems that we must look for the explanation sought. A *popular* government has its advantages, but there are advantages to science in the unlimited prerogatives of an autocratic monarch which seem to be impossible under democratic or representative governmental methods.

How quickly did the German Emperor recognize the immense advantage to his country and his reign of the great possibilities connected with the studies of Koch, and how ready was he to furnish the means from the National Treasury, independently of politics or election, to encourage him in his efforts!

The endowment of research in science by governmental patronage is a fruitful theme, and it very naturally finds a place within the scope of the purpose of my remarks; but when we consider the history of other nations in this regard, the desire to draw comparisons is irresistible.

Let me call your attention to some facts in this connection which may serve to emphasize our relative situation, and, I trust, may point the way for reform, which would place us in the line of that swelling tide of progress characteristic of our times.

The very highest honors are conferred upon individuals in Germany, France, England, and many other countries by the government for distinction in original research. Titles and decorations are granted them, and they are not only endowed with opportunities, financial and otherwise, to urge them on, but they are granted livings and pensions galore. For example, Cuvier by France, Berzelius by Sweden, Liebig by Germany, Jenner by England, were ennobled, public grants were awarded them, and public statues were erected in their honor and to their memory. Koch and Pasteur, of our own time, have been made the recipients of honors, titles and material assistance in the line of hospitals for their

experimental use, and laboratory privileges and facilities far beyond the dreams of the patient plodder and self-denying investigator in republican America. Here, with the wealth-worship and restrictive parsimony of our legislators, no inducement is offered the student whose tastes and natural qualifications lead him to devote his life and talents to original research; and unless he be possessed of a competency, he has no alternative but to turn his attention from his cherished object and devote his best energies to the practical necessities of life, biding his time and chance for the opportunity to do otherwise.

The world-renowned and immortal Agassiz conferred upon the United States the great prestige of his name and undying fame for what return? The paltry privilege of free transportation to the fields of his investigation upon Government vessels, while his wonderful labors and achievements for science were fostered and subsidized by the munificence of private individuals!

The English Government maintains a most excellent and systematic public health service. It annually grants funds for scientific researches to the Royal Society and to individuals for special studies in matters relating to sanitation; commissions composed of the most reputable scientists are sent abroad from time to time, to make special investigations of various diseases and subjects for the benefit of the public health. These commissions are maintained and subsidized almost without stint as to time or money. There is each year voted by the government large sums for what are called "Auxiliary Scientific Investigations," which are instituted on the recommendation of the local Government Board and the Medical Officer of the Privy Council. These sums are paid to skilled investigators and for the establishment and equipment of laboratories—physical, chemical and biological. Great inducements and much encouragement are offered by special government endowment to individuals and societies to stimulate progress in original research. There is a commission at present in India under the patronage of the English Government with unlimited facilities, charged with the duty of searching out and establishing the true etiology and pathology of leprosy; and another, with similar privileges, organized for the same duty with reference to rabies; and many other researches have been organized in times past for such objects almost without restriction as to time, apparatus, or money.

Contrast with this the lamentable experience of one of our own illustrious investigators, of whose fame every American is proud, and who is by no means unknown to this Society. Several years ago the necessities of the hour made it seem imperative to our Government to inquire into the etiology of yellow-fever, and Dr. George M. Sternberg, U. S. Army, was commissioned to visit Havana for the purpose. He had scarcely arranged his equipment and appliances when, in the midst of some of his observations, which promised the greatest results, he was ordered to return, as the insufficient appropriation was exhausted. He once made a trip to Mexico and Brazil for the same purpose with like results. It has been wisely said: "It is not in this manner that the patient and self-sacrificing labors, devoted to this end for many years by this distinguished scientist, are to be utilized."

Germany enjoys the distinction of having given the greatest impulse to etiological and pathological research of any civilized nation in recent years. Why? Simply because that enlightened government recognizes the vital importance to its people of sanitary investigation; and we are indebted to it and its great Imperial Board of Health for much of the astonishing progress of our time in bacteriological science and many life-saving and disease-preventing methods. Its greatest scientist, Robert Koch, by his immortal discoveries, signalized the beginning of a scientific warfare upon the two greatest scourges of the human race, which will never cease until they perish from the earth—tubercular consumption and Asiatic cholera.

Think of the possibility suggested, by the now undisputed establishment of the pathogenesis, of the ultimate extermination of that fell destroyer—tubercular consumption—which in the United States alone fills one hundred thousand graves each year!

Chimerical thought, say you? Utopianism?

No, by all means, no! The time will come, and all signs are propitious that many who hear me now will live to note the truth of my prediction, when the final extinction of this dreadful disease will be accomplished; and, shorn of its death-dealing power, it will take its place with the small-pox of to-day, which has practically "met its Waterloo."

Ladies and gentlemen, it is my belief that we are well advanced within the borderland of an era of progress upon these lines where wonders will be unceasing, and where the results obtained will not be by empirical methods, as at first characterized Jenner's immortal discovery, but "guided by the pure and certain light of science;" each victory won will be suggestive of another and a greater one beyond.

The patient and industrious Koch proposes that the struggle, "in this field of labor," against these "foes of the human race," shall be made the subject of an international contest for supremacy.

How worthy would be the object!

How beneficent the accomplishments!

How noble the ambition!

And in this vast enterprise where shall our beloved country be found?

Shall we remain in "Darkest Africa" or shall we seize the opportunity to grasp the victor's crown?

I dwell to some extent upon the institutions of the German Empire, because in many respects it, in my judgment, furnishes a model. The resources of her splendidly organized Imperial Board of Health are practically without limit, and the premiums which she provides for excellence in research are such as to gratify the most aspiring of her students. Her universities and all educational institutions are directly under governmental control and patronage; all teachers are government officers, with salaries and pensions; honors and titles are among the prizes offered and frequently awarded to the votaries of science, and no opportunity is neglected to demonstrate the national appreciation of merit and achievement, especially where the public benefit is concerned. In each of the leading universities the Imperial Government has established a hygienic institute, thoroughly equipped with lecture-rooms, special chemical, physical and bacteriological laboratories.

Nothing could be more satisfactory to the student of science than the encouragement offered and material assistance provided to stimulate and foster progress in original research in biology, physiology, pathology and the allied sciences by the Government of France. True to her history, both ancient and modern, in this regard, she still maintains, like Germany, a Department of Public Instruction, under which ministry the national patronage of her universities, colleges, institutes, academies and learned societies furnishes the widest and most alluring opportunities for profound and extended studies to her distinguished savants. Recognizing with characteristic aptitude the vast importance to the public welfare of the elucidation of the theories connected with studies in science, and their application to the popular interests, the people of the French nation, through their governmental authorities, have ever stood ready to provide the means which place the patient investigator at once far above the necessity of personal effort in this direc-

tion. The world-wide renown of Louis Pasteur, the father of bacteriology, is chiefly the result of this system; honors, prizes and pensions have been awarded him for his achievements in the study of fermentation, and it was easy for him to convince the authorities of the importance of his inoculation theory for the cure of hydrophobia. A fully equipped institute was immediately placed at his disposal, and an abundant appropriation provided for the investigation and elucidation of the subject from a scientific standpoint.

What, think you, would be the result if one of our own scientists should make to the Government of the United States a similar application for a similar purpose? Experience teaches that it is more than probable that he would meet the same reception that was accorded to the immortal Morse, when he exhibited the then curious machine to the Congressional Committee, and modestly asked for the pittance which was to inaugurate the development of the electric telegraph, the most stupendous scientific discovery since the beginning of the world. His instrument and himself were characterized as "cranks," and it is said that we are indebted to that circumstance for the origin of the colloquial use of that euphonious and now expressive term.

The French Government has recently established and subsidized a Pasteur institute in Constantinople, for the purpose of bacteriological and etiological study, and stimulated by this circumstance, the Sultan of Turkey has been aroused to the importance to the public weal of revolutionizing the study of medicine and public sanitation, and has established a medical faculty in accordance with the system of the more enlightened nations; he has also granted government patronage and supervision to public hospitals throughout his empire. His majesty has sent to foreign countries many distinguished students to study the most modern methods of scientific research, and has invited from France eminent physicians to perfect the organization of medical schools and hospitals. This is a very noteworthy circumstance, as a medical college has hitherto been unknown in Turkey. It also serves to emphasize the argument in favor of the endowment of scientific efforts by the State.

The recent history of far-away and so recently unenlightened Japan furnishes also a good example. Her parliamentary government, in the establishment of which the influence of the United States Government has been the greatest, has but reached its twenty-sixth year; and yet, in respect to the care of the public health and the endowment of scientific research, the "pupil has far outstripped the master;" a national board of health has been established, and is operating under the most advanced methods. She also constantly patronizes the distinguished students of the Empire, and maintains her medical schools and hospitals.

All the universities of the Empire of Russia are government institutions, the professors being government officers holding rank and titles: classes of young physicians are sent abroad to study the various branches of medicine under renowned teachers; endowments and facilities are publicly furnished to members of the medical societies of the country for scientific research.

Even disturbed and vacillating Mexico has a national health system, and maintains an attitude of patronage and control of her medical institutions and hospitals.

Numerous other comparisons of a similar nature might be cited in this connection, but I forbear, lest I weary you with detail. The inference to be drawn from such premises points, with irresistible force, to an amazing public indifference, and demonstrates with the greatest emphasis the culpable negligence of the people of this great and enterprising country to the pre-eminently practical subject of the necessity for an organized effort for the preservation of life and the prevention of disease, the constant agitation of which should never cease until our rightful and logical position among the enlightened nations of the world is firmly and enduringly established.

I trust sincerely that by these references the impression has not been created that I take a pessimistic view of my country's institutions. I yield to no one in my admiration and love of American methods and customs; it is that very admiration and love and a hopeful desire to see a shameful inconsistency corrected which inspires me to speak these words.

And here the question arises, Does our National Government do nothing to foster science and scientific enterprises? Yes; it maintains a Scientific Agricultural Department, and so abundantly provides for it, that it has reached a position in recent years where it can successfully vie with any similar department in any land.

Does this department now deserve the opprobrium which, sometime, was cast upon it, of existing only for the purpose of distributing garden seeds?

I venture to say that if any argument is needed to demonstrate the importance and feasibility of a National Department of Health, it could readily be found in the history of the wonderful progress made in the Science of Agriculture and the diversified interests connected with it in the brief period since it was elevated to the dignity of an executive department. Aided by appropriations lavishly bestowed by Congress, its scope and powers have been enlarged to such an extent, that it has already attained to a sphere of usefulness and accomplished results which justify the pride and appreciation of every American citizen. Within its scope are included a great variety of divisional departments, having for their objects the technical observation and study of subjects relating to the care and protection of the health and lives of plants and domestic animals.

Among these numerous divisions—too numerous to allow of even mention here—there is maintained and endowed with most adequate appropriations by Congress a Bureau of Animal Industry, wherein a systemized scientific study of animal pathology is pursued, comprehending the necessary investigations pertaining to the prevention and treatment of all the diseases to which the domestic animals of the country are subject. Renowned expert pathologists, microscopists, and veterinarians are employed and comfortably salaried, and laboratories and appliances are provided for the prosecution of this work, the success of which has been so great that, according to the latest report of the Secretary of Agriculture (to which I am indebted for many of these facts), the almost total eradication of the contagious diseases of animals has been accomplished.

Even greater things are done under Government patronage in the field of vegetable pathology, as witness the following quotation from the report just mentioned: "During the past year, as heretofore, the Division of Vegetable Pathology has devoted special attention to field work, having in view the prevention of plant diseases."

Scientific assistants were sent abroad to establish laboratories for the investigation of the causes of all the destructive maladies of fruit-trees and plants, and the means for their eradication and treatment.

"Agricultural experiment stations" (in which these investigations are made) "are now in operation in all the States and Territories except Montana and Idaho. Of the fifty-five stations in the United States, fifty in forty-three States and Territories receive their support, wholly or in part, from the United States Treasury. The stations employ four hundred and fifty persons in the work of administration and inquiry. The mailing lists of the stations include about three hundred and fifty thousand names."

It is stated that these stations are the "recipients of the

national bounty to the extent of considerably over a million and a half dollars annually."

The Fifty-first Congress of the United States has just passed into history. Among the many famous distinctions which it won was its title to the appellation, "The Billion-Dollar Congress."

Think of it, one thousand million dollars appropriated by a single Congress for the material interests of this nation! And in the multitudinous bills which provide for the disbursement of this enormous sum of money, *not one clause or paragraph appears which can, in any manner, be construed to apply directly to the elucidation of any one of the important and vital problems connected with the prevention of the infectious diseases with which the tax-paying people are constantly menaced or afflicted!*

What apology can be offered for such a monstrous inconsistency?

Let us suppose, for example, that the jobs and misappropriations included in the fifteen or twenty million-dollar River and Harbor Appropriation Bills, which are annually passed with the greatest *éclat*, chiefly for the purpose of furthering the interests of scheming and ambitious politicians, be applied to the encouragement of experimental research for the discovery of means for the prevention and cure of the infections and diseases which constantly menace the health and lives of the citizens of this great country, and we would have, without doubt, the best equipped public health department of any nation on the globe. Certainly I do not wish to be understood as opposing the protection of our harbors, and the improvement of our coast defences, with a view to the intimidation of a supposititious foe, in *just possible* invasion, or the encouragement of the great monetary interests connected with our merchant marine. Neither would I wish to discourage the immense subsidies and land grants for transcontinental railroads; the building of the great warships for the new navy, of which we will all one day be proud; nor yet would I for a moment deny the importance of protecting the fish hatcheries, or the Alaskan seals, or the payment of the enormous sum which seems to be required to settle the dispute as to our rights in the Behring Sea, in order that the interests of our half-breed fellow-citizens may be properly protected and their employers satisfactorily aggrandized.

I would not undervalue the efforts which our Congress has made in granting appropriations for the establishment of agricultural experiment stations, and the employment of experts to investigate "bacterial and fungus diseases of caterpillars," for the purpose of discovering a contagious germ which may be artificially transmitted to the damaging boll-worm of cotton; or for the importation of the parasites of the cabbage worm and Hessian fly; or for the payment of salaries of experimentalists on missions to Australia and New Zealand, to scour those infested lands to procure parasitic insects which would benefit the horticultural and agricultural interests of this nation!

I might carry this figure on almost *ad infinitum*. I might have exhausted my time and your patience had I undertaken to mention *all* this great Government of ours is doing and has done in vegetable pathology, botany, ornithology, mammology, entomology, animal pathology, and numerous other scientific departments.

Assuredly, I believe that these are commendable undertakings, and doubtless valuable to the material and moneyed interests of our people, to an extent which justifies the millions annually expended; but let me ask you to glance with me at another side to this picture. Does it seem possible that, with all these facts in view, the surprising statement can be made that the Congress which places such a high estimate upon the lives of plants and animals cannot find it consistent to appropriate one dollar for the preservation of *human* health and life?

Can it be that the free and enlightened Government of the United States, whose underlying principle is to "provide for the common defence" and "promote the general welfare," resourceful and prosperous to an extent far beyond the wildest conceptions of other civilized nations, having in its Treasury an annual surplus of receipts over expenditures mounting high into the millions, does not appreciate the need of providing for "common defence" against an invisible and relentless foe—a destructive force, at once intangible and imponderable, but powerful far beyond the reach of gunpowder and guns or arbitration bonds?

At this point and in conclusion let me formulate what I would propose, and what I hope in the near future to see established:

It has long been my conviction that there should be in this, as in every other nation, a systematically conducted central public health system, whether called a department, bureau, board, or otherwise; that it should have a responsible head; that it should have the coöperation, and assistance when required, of all state and municipal boards and authorities; that it should be a distinct and separate branch of the public service, having powers, duties, and privileges entirely its own; that it should be unhampered and undisturbed by political circumstances or changes, with ample funds and facilities for the elucidation and treatment of all the great and perplexing problems pertaining to the prevention of disease.

Whatever may be thought or said regarding the centralization of authority in a political sense, here, it seems to me, its advantages to the people of a nation are too apparent to admit the possibility of question.

National control of public sanitation is "protection" in its highest and most beneficent signification.

My own conception of our present pressing need is as follows:

I would have the National Board of Health, as at present provided, rehabilitated and charged with the duty of supervising, particularly all matters of public health in the *interior*, calling it, perhaps, the "Health Department of the Interior;" I would have the Marine Hospital Service, as at present constituted, especially clothed with powers relating to *external* quarantine; I would have both these departments retained, acting separately under ordinary circumstances, and jointly in certain contingencies when they arise; I would have in connection with this Health Department of the Interior numerous experiment stations established, which should be entirely under Government patronage and control, and fully equipped with laboratories—chemical, physical, and bacteriological—each with an efficient corps of well-trained scientists, upon the same general plan by which the agricultural experiment stations, previously mentioned, are operated; I would have these scientific observers made Government officers, with salaries sufficient to insure against their personal wants and pensions when retired, in order that their undivided attention might be given to the work for which they are employed; I would have them constantly commissioned to make original and experimental investigations into the ultimate causes of disease, wherever found, and required to report the results for publication and distribution.

As an auxiliary to this Board, I would have a National Congress of Health, to take the place of the present "Conference of State Boards," which shall meet at regular intervals—a representative body composed of delegates from each of the State and Territorial boards.

And when, as in logical sequence these proposed premises suggest, an *International Board of Health* shall be established,

the most efficient state of development will be attained, and sanitary science will be a mighty messenger to indicate the approach of a perfected civilization, when the protection of the health and life of every human being will be regarded as the highest and most paternal function of the State.

Let us confidently cherish the hope that we soon shall see the day when the public indifference to this all-important subject will be overcome, and when our public servants will be induced to worship the powerful Mammon less and seek the beneficent shrine of the goddess Hygeia more.

The late lamented Samuel David Gross, the illustrious sage, the prince of American surgeons, at the dedication of the monument erected to the memory of the pioneer of abdominal surgery, Ephraim McDowell, gave utterance to the following significant farewell words:

"Young men of America! Listen to the voice of one who has grown old in his profession, and who will probably never address you again, as he utters a parting word of advice. The great question of the day is not this operation or that, not ovariotomy or lithotomy or hip-joint amputation, which have reflected so much glory upon American medicine, but *preventive medicine*, the hygiene of our persons, our dwellings, our streets—in a word, our surroundings, whatever and wherever they may be, whether in city, town, hamlet, or country; and the establishment of efficient town and State boards of health, through whose agency we shall be more able to prevent the origin and fatal effects of what are known as the zymotic, or preventible diseases, which carry so much woe and sorrow into our families, and often sweep like hurricanes over the earth, destroying millions of human lives in an incredible short time.

"The day has arrived when the people must be aroused to a deeper and more earnest sense of the people's welfare, and suitable measures adopted for the protection, as well as for the better development of their physical, moral, and intellectual powers.

"This is the great problem of the day—the question which you, as representatives of the rising generation of physicians, should urge, in season and out of season, upon the attention of your fellow citizens—the question which above and beyond all others should engage your most serious thoughts and elicit your most earnest coöperation.

"When this great object shall be attained, when man shall be able to prevent disease, and to reach, with little or no suffering, his three-score years and ten, so graphically described by the Psalmist, then, and not till then, will the world be a paradise."—*The Sanitarian.*

SIMULTANEOUS LIGATURE OF CAROTID AND SUBCLAVIAN ARTERIES.—Mr. Mackellar recently ligatured simultaneously the carotid and subclavian arteries in a case of probable innominate aneurysm at St. Thomas's Hospital. The patient, a man aged thirty-four, a constable of the Metropolitan Police, who had been in earlier years a professional runner and afterwards served in the cavalry, felt the aneurysm a month before he came under treatment in the hospital. A special point in the case is that he has undergone ligature of the superficial femoral artery on each side for popliteal aneurysms. The first operation was performed more than four years ago, the second about two and a half years since, and he carried on his duty as a constable until the appearance of the aneurysm for which he is now under care. Since the ligature of the femorals (also by Mr. Mackellar) he has done work in the mounted branch of the service. It is possible that a fall when on duty in November, when his horse fell with him and injured his chest, has had something to do with the causation of the aneurysm for which the recent operation has been rendered necessary. Up to the present, progress has been most satisfactory, the aneurysmal swelling is diminished in size, and the pulsation is considerably less.—*The Lancet.*

AN OUNCE OF CAMPHOR dissolved in three ounces of turpentine has been used in Columbia Hospital for Women to check secretion of milk in mastitis. It relieves pain, diminishes induration, and reduces inflammation. Care should be taken that the part should not be so tightly covered that the application shall produce irritation of the surface.

A SOCIETY FOR THE HELP OF DISCHARGED LUNATICS.—The French Minister of the Interior has sent a circular note to the prefects of the different departments relative to the creation of benevolent societies, whose object it should be to help lunatics discharged from asylums. Many insane persons are perfectly harmless, and are only kept in asylums because they have no means of support, and are incapable of earning their living. The Minister urges on the prefects the desirability of their promoting the establishment of charitable societies for the purpose indicated.

NECROLOGY.

DR. MILTON BALDWIN died at his home in East Orange, N. J., on February 29. He was born in Newark in 1821, studied medicine under Mott, Revere and Draper in the New York University, graduating in the second class of that school, in 1843. He settled in Newark soon after, and in 1848 became coroner of that city, also again from 1854 to 1858. He was at one time President of the Board of Councilmen, and of the Essex County Medical Society. In 1862, he was appointed to the surgical staff of the Ward General Hospital, at Newark, and there continued on duty until June, 1865. He was an interested member in the New Jersey Historical Society and other organizations, which made him exceptionally well-known throughout his State. He retired from active professional practice about 1885.

DR. EPENETUS P. JARVIS, of Centre Moriches, N. Y., died February 24, aged 68 years. He was a graduate of the University Medical College, class of 1852. He had been a prominent and respected practitioner of his locality nearly forty years. The cause of his final illness was ascribed to septicæmia, consequent upon an ingrown toe-nail.

DR. CHARLES A. SAVORY, of Lowell, Mass., who died on the 2d ult., had been a member of the Association from 1877. He was a native of Beverly, Mass., having been born there in 1813. He was graduated from Dartmouth College in 1836. He resided in Hopkinston, N. H., a few years, removed to Philadelphia, where he temporarily held the chair of obstetrics in the Philadelphia Medical College. In 1848, he took up his residence permanently in Lowell, and became highly successful both in general and ophthalmic surgery. He was an early and ardent advocate of antiseptic surgery.

WM. H. BUNCE, M.D., died at his residence in Oberlin, O., February 13, where he practiced his profession from the time of his graduation until his death. Dr. Bunce was born in Paterson, N. J., June 29, 1830. He came of the ancient Scottish house of Kennedys, his mother being the only daughter of Sir Archibald Kennedy; the present head of the house being the Marquis of Ailsa. He was married June 27, 1852, to Ellenor S. Conant, who survives him, also two daughters and one son, Dr. W. C. Bunce. He was full surgeon with rank as Major during the war, was connected with a number of medical societies, and had at various times held prominent positions in them. Has been known as one of the leading surgeons of northern Ohio. There was a peculiar gentleness in his ministrations to those who came under his care, which made them feel he was not only their physi-

cian but their friend, and it may be well said that by his skill and worth, that he has built up a monument for himself, that will live after him in the hearts that learned to love him.

MISCELLANY.

THE Chairman of the Section of Obstetrics and Diseases of Women would be glad to receive the titles of proposed papers from those who desire to take part in the proceedings of the Section at the next meeting of the Association, as it is important the titles should be presented as early as possible, in order to make proper arrangements for their careful consideration and discussion.

E. E. MONTGOMERY.

1818 Arch St., Philadelphia, March 5th, 1892.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—The Chair of Obstetrics has become vacant through the resignation of Dr. E. E. Montgomery, who will hereafter devote himself entirely to the Chair of Gynecology.

NEW BUILDINGS FOR THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.—The board of trustees and faculty of the Jefferson Medical College have just completed the purchase of two large lots on Broad street, giving them a frontage of about 300 feet and a depth of 150 feet, upon which they will proceed to erect at once a handsome hospital, lecture hall and laboratory building. The estimated cost of the buildings is $500,000. The hospital will be built, not only as a suitable building in which to care for the sick and injured, but also will be provided with a large amphitheatre for clinical lectures. The basement of the hospital building will be given over to the various dispensaries, each of which will be provided with large waiting and physicians' rooms, as well as rooms for direct teaching of students. The buildings will be absolutely fire proof and provided with patent sprinklers in case their contents catch fire. By the erection of three commodious buildings, the laboratories where delicate work with the microscope or apparatus is carried on, will be separated from the college hall, where didactic lectures are given, and so will be free from any jarring produced by the movement of large classes. With the hospital on one side affording clinical facilities, and the laboratory on the other side of the college hall for scientific research and training the college will be most favorably situated for giving thorough instruction in medicine. Further than this, immediately across the street is the Howard Hospital and on the adjoining corner the Ridgway branch of the Philadelphia Free Library, which contains all the scientific works belonging to this wealthy corporation. The new site is even more favorably situated in regard to the centre of the city than the old one at Tenth and Sansom streets. The move has been made necessary by the large number of students who are now being instructed in this institution and because the faculty desire to keep the school and hospital in the foremost rank of medical education in this country.

The buildings will be ready for occupancy in the session of 1893-94.

THE MEDICAL SOCIETY OF THE MISSOURI VALLEY will meet at Chickering Hall, Leavenworth, Kansas, March 17 and 18, 1892.

The following papers will be read:

1. Microcephalus. Report of Case. By Dr. J. F. Binney, Kansas City, Mo.

2. Etopic Pregnancy. Report of Case. By Dr. P. D. St. John, Wichita, Kan.

3. Tired Ovaries. By Dr. J. M. Richmond, St. Joseph, Mo.

4. Oöphorectomy. Case and Results. By Dr. J. H. Van Eman, Leavenworth, Kan.

5. Modern Therapeutics. By Dr. O. B. Campbell, St. Joseph, Mo.

6. Immense Abdominal Distention, preceeding and following labor. By Dr. M. A. Kelso, Clyde, Mo.

7. A New Micro-Parasite. By Dr. M. F. Weymann, St. Joseph, Mo.

8. Review of a few Cases of Rectal Surgery. By Dr. S. G. Gant, Kansas City, Mo.

9. La Grippe of the Larynx. By Dr. Daniel Morton, St. Joseph, Mo.

10. General Paralysis. Report of Two Cases. By Dr. F. S. Thomas, Council Bluffs, Iowa.

11. Uterine Diseases of Aged Women. By Dr. Adda Bowerman, Reynolds, Neb.

12. Abscess of Thyroid Gland. Report of Six Cases. By Dr. Hal Foster, Kansas City, Mo.

13. Osteo Sarcoma about Knee joint. Report of Five Cases. By Dr. Jacob Geiger. St. Joseph, Mo.

14. Valvular Lesions of Heart, Pathology and Treatment. By Dr. Joseph Sharp, Kansas City, Mo.

15. Relations of Phthisis Pulmonalis to Fistula in Ano. By Dr. Leon Straus, St. Louis, Mo.

16. Present Problems in Bacteriology. By Dr. P. I. Leonard, St. Joseph, Mo.

17. Metorrhagia occurring about the Menopause. By Dr. T. J. Beattie, Kansas City, Mo.

18. Chronic Rhinitis, effects upon middle ear. By Dr. T. E. Potter, St. Joseph, Mo.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending March 5, 1892.

Medical Inspector Geo. R. Brush, ordered to Navy Yard, Brooklyn, N. Y.

Medical Inspector Edw. Kershner, from Navy Yard, New York, and to U. S. S. "San Francisco."

Medical Inspector J. H. Clark, from the U. S. S. "San Francisco," and ordered home.

Medical Director A. L. Gihon, detached from Naval Hospital, and to special duty at New York, attending officers of the Navy and Marine Corps.

Medical Director W. K. Scofield, detached from special duty at New York, attending officers of Navy and Marine Corps, and wait orders.

Medical Director E. S. Bogert, detached from Medical Examing Board, and to Naval Hospital, Brooklyn, N. Y.

Asst. Surgeon C. M. De Valin, to Naval Hospital, Norfolk, Va.

OFFICIAL LIST OF CHANGES of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending February 27, 1892.

Surgeon George Purviance, detailed as chairman Board of Examiners. February 20, 1892.

Surgeon J. B. Hamilton, detailed for special duty. February 18, 1892.

Surgeon G. W. Stoner, detailed as member Board of Examiners. February 20, 1892.

Surgeon Fairfax Irwin, ordered to Norfolk, Va., for temporary duty. February 16, 1892. Granted leave of absence for seven days. February 24, 1892.

Surgeon H. R. Carter, detailed as recorder, Board of Examiners. February 20, 1892.

P. A. Surgeon W. A. Wheeler, ordered to examination for promotion. February 16, 1892.

P. A. Surgeon G. T. Vaughan, detailed as executive officer, Supervising Surgeon-General's Office. February 27, 1892.

National and State Medical Societies of America.

AMERICAN MEDICAL ASSOCIATION.

Annual meeting at Detroit, Mich., June 7.

W. B. Atkinson, M.D., Sec., 1400 Pine St., Philadelphia, Pa. Henry O. Marcy, M.D., Prest., Boston, Mass.

AMERICAN ASSOCIATION OF ANDROLOGY AND SYPHILOLOGY.—Annual meeting at Richfield Springs, N. Y., June 20. J. A. Fonlyce, M.D., Sec., 60 Park Ave., New York City; A. T. Cabot, M.D., Prest., 3 Marlborough St., Boston, Mass.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—Annual meeting at St. Louis, Mo., September 20. William Warren Porter, M.D., Sec., Buffalo, N. Y.; Albert VanderVeer, M.D., Prest., Albany, N. Y.

AMERICAN ACADEMY OF MEDICINE.—Annual meeting at Detroit, Mich., June 4. Charles McIntire, M.D., Sec., Easton, Pa.; Phineas S. Conner, M.D., Prest., Cincinnati, O.

ASSOCIATION OF AMERICAN PHYSICIANS.—Annual meeting at Washington, D. C., May 24. Henry Mun, M. D. Sec., 33 Elk St., Albany, N. Y.; Henry M. Lyman, M.D., Prest., 65 Randolph St., Chicago, Ill.

AMERICAN DERMATOLOGICAL ASSOCIATION.—Annual meeting at Cushing's Island, Portland Harbor, Me., September 13. George Thomas Jackson, M.D., Sec., 14 E. 31st St., New York City; E. B. Bronson, M.D., Prest., 123 West 34th St., New York City.

AMERICAN GYNECOLOGICAL SOCIETY.—Annual meeting at Brooklyn, N. Y., September 20. Henry M. Coe, M.D., Sec., 27 E. 64th St., New York, N. Y.; John Byrne, M.D., Prest., Brooklyn, N. Y.

AMERICAN LARYNGOLOGICAL ASSOCIATION.—Annual meeting at Boston, Mass., May ——. Chas. H. Knight, M.D., Sec., 20 West 31st St., New York City; S. W. Langmaid, M.D., Prest., Boston, Mass.

AMERICAN OPHTHALMOLOGICAL SOCIETY.—Annual meeting at New London, Conn., July 20. S. B. St. John, M.D., Sec., 43 Pratt St., Hartford, Conn.; Hasket Derby, M.D., Prest., Boston, Mass.

THE AMERICAN ORTHOPEDIC ASSOCIATION.—Annual meeting at New York, September 20. John Ridlors, M.D., Sec., 337 West 57th St., New York, N. Y.; Benj. Lee, M.D., Prest., 1532 Pine St., Philadelphia, Pa.

THE MEDICO-LEGAL SOCIETY.—Annual meeting, New York. Clark Bell, Esq., Sec., New York, N. Y.; Hon. H. M. Somerville, Prest., New York, N. Y.

NATIONAL ASSOCIATION OF RAILWAY SURGEONS.—Annual meeting at Washington, D. C. E. R. Lewis, M.D., Sec., Kansas City, Mo.; J. H. Murphy, M.D., Prest., St. Paul, Minn.

OHIO VALLEY MEDICAL SOCIETY.—Annual meeting at —. Wm. S. Hoy, M.D., Sec., Wellston, Ohio; Ed. H. Fravel, M.D., Prest., Poca, W. Va.

STATE.

MEDICAL ASSOCIATION OF THE STATE OF ALABAMA.—Annual meeting at Mongomery, April 12. Thomas Alexander Means, M.D., Sec., Mongomery, Ala.; Benjamin James Baldwin, Prest., Montgomery, Ala.

STATE MEDICAL SOCIETY OF ARKANSAS.—Annual meeting at Little Rock, June 2. L. P. Gibson, M.D., Sec., Little Rock, Ark.; J. S. Shibley, M.D., Prest., Paris, Ark.

CONNECTICUT MEDICAL SOCIETY.—Annual meeting at New Haven, May 24. N. E. Windin, M.D., Sec., 174 Fairfield Ave., Bridgeport, Conn.; C. A. Lindsley, M.D., Prest., Bridgeport, Conn.

THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.—Annual meeting at San Francisco, April 19. Wm. Walter Kerr, M.D., Sec., 600 Sutter St., San Francisco, Cal.; O. O. Burges, M.D., Prest., 329 Geary St., San Francisco, Cal.

COLORADO STATE MEDICAL SOCIETY.—Annual meeting at Denver, June 21. H. M. McLaughlin, M.D., Cor. Sec., Denver, Col.; Wm. M. Strickler, M.D., Prest., Colorado Springs, Col.

FLORIDA STATE MEDICAL SOCIETY.—Annual meeting at Key West, April 5. J. Harris Pierpont, M.D., Prest., Jacksonville, Fla.; J. D. Fernandiz, M.D., Sec., Jacksonville, Fla.

THE MEDICAL ASSOCIATION OF GEORGIA.—Annual meeting at Columbus, April 20. G. W. Mulligan, M.D., Prest., Washington, Ga.; Dan H. Howell, M. D., Sec., Atlanta, Ga.

ILLINOIS STATE MEDICAL SOCIETY.—Annual meeting at Vandalia, May 17. David W. Graham, M.D., Sec., 133 Clark St., Chicago, Ill.; Chas. C. Hunt, M.D., Prest., Dixon, Ill.

INDIANA STATE MEDICAL SOCIETY.—Annual meeting at Indianapolis, May 12. E. S. Elder, M.D., Sec., 44 E. Ohio St., Indianapolis, Ind.; Edward Walker, M.D., Prest., Evansville, Ind.

IOWA STATE MEDICAL SOCIETY.—Annual meeting at Des Moines, May 18. C. F. Darnall, M.D., Sec., West Union, Ia.; G. F. Jenkins, M.D., Prest., Keokuk, Ia.

STATE MEDICAL SOCIETY OF KANSAS.—Annual meeting at Fort Scott, May 3. W. S. Lindsay, M.D., Sec., Topeka, Kan.; J. E. Oldham, M.D., Prest., Wichita, Kan.

KENTUCKY STATE MEDICAL SOCIETY.—Annual meeting at Louisville, May 1. Steele Bailey, M.D., Sec., Stanford, Ky.; H. Brown, M.D., Prest., Hustonville, Ky.

THE LOUISIANA STATE MEDICAL SOCIETY.—Annual meeting at New Orleans, April 27. P. B. McCutchon, M.D., Sec., New Orleans, La.; J. B. Elliott, Prest., New Orleans, La.

MAINE MEDICAL ASSOCIATIOM.—Annual meeting at Portland, June 8. Chas. D. Smith, M.D., Sec., 126 Free St., Portland, Me.; Edwin M. Fuller, M.D., Prest., Bath, Me.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.—Annual meeting at Baltimore, April 26. Joseph T. Smith, M.D., Cor. Sec., 1010 Madison Ave., Baltimore, Md.; W. H. Welch, M.D., Prest., Johns Hopkins Hospital, Baltimore, Md.

MASSACHUSETTS MEDICAL SOCIETY.— Annual meeting at Boston, June 7. F. W. Goss, M.D. Sec., Roxbury, Mass.; A. H. Johnson, M.D., Prest., Salem, Mass.

MICHIGAN STATE MEDICAL SOCIETY.—Annual meeting at Flint, May 5. Charles W. Hitchcock, M.D., Sec., Detroit, Mich.; George E. Ranney, M.D., Prest., Detroit, Mich.

MINNESOTA STATE MEDICAL SOCIETY.—Annual meeting at St. Paul, June 15. Chas. B. Whitherle, M.D., Sec., Endicott Arcade Bldg., St. Paul, Minn.; Park Ritchie, M.D., Prest., St. Paul, Minn.

MEDICAL ASSOCIATION OF MISSOURI.—Annual meeting at Pertle Springs, Johnson Co., May 17. L. A. Berger, M.D., Rec. Sec., Kansas City, Mo.; T. F. Prewitt, M.D., Prest., St. Louis, Mo.

MEDICAL ASSOCIATION OF MONTANA.—Annual meeting at Butte, April 20. G. H. Barbour, M.D., Cor. Sec., Helena, Mont.; J. H. Owings, M.D., Prest., Deer Lodge, Mont.

NEW HAMPSHIRE MEDICAL SOCIETY.—Annual meeting at Concord, June 20. G. P. Conn, M.D., Sec., Concord, N. H.; M. W. Russell, M.D., Prest., Concord, N. H.

NEW YORK STATE MEDICAL ASSOCIATION.—Annual meeting at New York, November 15. E. D. Ferguson, M.D., Sec., Troy, N. Y.; J. B. Andrews, M.D., Prest., Buffalo State Hospital, Buffalo, N. Y.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.—Annual meeting at Albany, Feb. 7, 1893. F. C. Curtis, M.D., Sec., 17 Washington Ave., Albany, N. Y.; A. Walter Suiter, M.D., Prest., cor. Court and Main Sts., Herkimer, N. Y.

MEDICAL SOCIETY OF NEW JERSEY.—Annual meeting at Atlantic City, June 28. W. Elmer, M.D., Cor. Sec., Trenton, N. J.; E. J. Marsh, M.D., Prest., Paterson, N. J.

NEBRASKA STATE MEDICAL SOCIETY.—Annual meeting at Omaha, May 10. L. A. Merriam, M.D., Cor. Sec., 15th and Furman Sts., Omaha, Neb.; Charles Inches, M.D., Prest., Scribner, Neb.

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.—Annual meeting at Wilmington, May 24. J. M. Hays, M.D., Sec., Oxford, N. C.; Wm. T. Cheatham, M.D., Prest., Wilmington, N. C.

THE OHIO STATE MEDICAL SOCIETY.—Annual meeting at Cincinnati, May 3. T. V. Fitzpatrick, M.D., Sec., Cincinnati, O.; G. A. Collamore, M.D., Prest., Toledo, O.

OREGON STATE MEDICAL SOCIETY.—Annual meeting at Portland, June 2. F. Cauthorn, M.D., Prest., Portland, Ore.; C. H. Wheeler, M.D., Sec., Portland, Ore.

THE STATE MEDICAL SOCIETY OF PENNSYLVANIA.—Annual meeting at Harrisburg, May 17. Samuel L. Kurtz, M.D., Prest., Reading, Pa.; Wm. B. Atkinson, M.D., Sec., 1400 Pine St., Philadelphia, Pa.

RHODE ISLAND MEDICAL SOCIETY.—Annual meeting at Providence, June 2. William H. Polmer, M.D., Prest., Providence, R. I.; George D. Hessey, M.D., Cor. Sec., Providence, R. I.

SOUTH DAKOTA MEDICAL SOCIETY.—Annual meeting at Salem, June 8. M. Ware, M.D., Prest., Salem, So. Dak.; W. C. Warne, M.D., Sec., Mitchell, So. Dak.

SOUTH CAROLINA MEDICAL ASSOCIATION.—Annual meeting at Georgetown, April 28. J. R. Bratton, M.D., Prest., Yorkville, S. C.; Mozyck Raniuel, M.D., Cor. Sec., 103 Wood St., Charleston, S. C.

TENNESSEE STATE MEDICAL SOCIETY.—Annual meeting at Knoxville, April 12. J. W. Pierce, M.D., Prest., Humboldt, Tenn.; D. E. Nelson, M.D., Sec., Chattanooga, Tenn.

THE TEXAS STATE MEDICAL ASSOCIATION.—Annual meeting at Tyler, April 26. W. H. Wilkes, M.D., Prest., Waco, Texas; H. A. West, M.D., Sec., Galveston, Texas.

VERMONT STATE MEDICAL SOCIETY.—Annual meeting at Montpelier, October 14. C. S. Caverly, M.D., Prest., Rutland, Vt.; D. C. Hawley, M.D., Sec., Burlington, Vt.

MEDICAL SOCIETY OF VIRGINIA.—Annual meeting at Luray, October 1. H. Grey Latham, M.D., Prest., Lynchburg, Va.; J. F. Winn, M.D., Cor. Sec., 714 E. Franklin St., Richmond, Va.

THE MEDICAL SOCIETY OF THE STATE OF WASHINGTON.—Annual meeting at North Yakima, May. H. C. Wilson, M.D., Prest., Port Townsend, Wash.; Geo. S. Armstrong, M.D., Sec., Olympia, Wash.

THE WISCONSIN STATE MEDICAL SOCITY.—Annual meeting at Milwaukee, May 4. George F. Witter, M.D., Prest., Grand Rapids, Wis.; Charles S. Sheldon, M.D., Cor. Sec., Madison, Wis.